

# OCCASIONAL PAPERS

from the  
**MUSEUM of  
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*Front cover : Castiarina burnsi* (Barker) was named after Mr Gordon Burns in recognition of his enormous contribution to the study of burprestid beetles. The species occurs in the Big and Little Deserts in Victoria and Gawler in South Australia. Illustration by Graham Milledge.

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References should be listed alphabetically at the end of the manuscript. Journal citations must be in full. References to books must give the year of publication, edition, name of publisher and city of publication. Titles of books and names of journals should be underlined.

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# The distribution of Victorian jewel beetles (Coleoptera: Buprestidae) – an ENTRECS project

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**Abstract.** Burns, G.G. and Burns, A.J., 1992. The distribution of Victorian jewel beetles (Coleoptera: Buprestidae) – an ENTRECS project. *Occasional Papers from the Museum of Victoria* 5: 1–53.

A checklist of the 300 species of Victorian Buprestidae is presented with maps showing the distribution of each species.

## Introduction

The ENTRECS PROJECT of the Entomological Society of Victoria (Inc.) aims to record data on the distribution of insects in Victoria in a form which could be readily expanded to cover the whole of Australia. An explanatory handbook has been produced and data solicited from collectors. At its inception donations were received from two companies to assist in furthering the project. A first book with distribution maps of butterflies of Victoria was produced (Entomological Society of Victoria, 1986).

This, the second contribution to the project, is a checklist of the Victorian Buprestidae with maps showing the distribution of each species within Victoria. The text and maps have been compiled for the Entomological Society of Victoria (Inc.) on a Macintosh computer and are presented as a starting point for future workers. The compilation relies on the identifications of many collectors.

## Systematics

Buprestidae, or jewel beetles, are, as their common name suggests, probably the most colourful of all beetles. Although they show great variation of size and colour they are all of much the same shape. The prothorax is closely joined to the rest of the body and the head fits neatly so that the beetle is compact, narrow and oval. They can be recognized by a transverse metasternal suture and the partly fused first two abdominal sternites (Matthews, 1985). The adults are very active in hot weather and fly readily in sunlight. Many can be found on nectar bearing flowers such as, *Eucalyptus*, *Leptospermum*, *Bursaria* and *Baekia*.

The family name Buprestidae was introduced by Leach (1815) and used later by Eschscholtz (1829). The name is from Greek: "bous" (cattle) and "prethein" (to blow up). The beetles were evidently thought to be poisonous to animals and were probably confused with meloids (Bright, 1987). There are about 12 000 species worldwide with approximately 850 species known from Australia. Bellamy (1986) recognised seven subfamilies and 22 tribes for Australian Buprestidae. All

subfamilies and 17 of the tribes are represented from Victoria by 300 species.

Bellamy's (1986) classification of the higher taxa and his synonymies are followed in this contribution. More recent changes to his systematic arrangement have not been followed. Cobos (1986) included *Merimna* Thomson in Melanophilini rather than in Actenodini as is usual. Toyama (1987) synonymised Chalcophorinae with Buprestinae but did not elaborate on how the tribes of Chalcophorinae should be considered. For some species dealt with in this paper more complete synonymies than are given here can be found in Carter and Théry (1929).

The only taxonomic changes made here involve *Pachycisseis* and *Neospades* (Bellamy, 1988: 417) and *Themognatha* and *Castiarina* (Gardner, 1990: 338). All four names have been elevated from subgeneric to generic rank.

## Distribution maps

The ENTRECS scheme divides the State into major blocks, each corresponding to a map in the Commonwealth of Australia 1:250,000 series R502. Each block is given an alphabetical code. These major blocks are further subdivided into 54 areas each 10 minutes of latitude (18 km) by 10 minutes of longitude (15 km).

Map A shows the overall distribution of all buprestids recorded to 31 March 1990. The remaining maps are distributional maps for individual species. They represent data from 5735 records obtained from specimens in museums, private collections, literature, from private communication, or visually identified in the field. Each "record" represents one or more beetles in a single collection made at one time and place, or a unique field observation. Specimens come from 27 collections made by over 210 collectors. They date from the earliest specimens that we have been able to locate, 6 specimens of *Melobasis nervosa* Boisduval collected at Prahran in October 1865, until 31 March 1990.

The material for this report is based on collections in: Australian Museum, Sydney; Australian National Insect Collection, CSIRO, Canberra; Museum of Victoria, Melbourne; Queensland Museum, Brisbane; Entomology Department, University of Queensland, Brisbane; South Australian Museum,

<sup>1</sup> Gordon G. Burns died on 12 December 1990 shortly after completing this manuscript.



Adelaide; Tasmanian Museum, Hobart; Victorian Agricultural Insect Collection, Burnley; and the following private collections: E.E. Adams, G.W. Anderson, I. Faithfull, F. Hallgarten, J. Harslett, K. Hateley, D.R. Holmes, Y. Komiya, J.C. LeSouef, M.W. Mules, S.K. Smith, A. Sundholme, R.G. Thompson, G. and T. Williams and the authors' collection.

Maps are not provided for species recorded from Victoria only in the literature, or for species represented by specimens labelled simply as Victoria, Mallee dist., Western dist. or Gippsland. These are: *Neobubastes aureocincta* Blackburn, (Mallee dist.); *Neobubastes orientalis* Carter, (Vic.); *Balthasarella melandryoides* Obenberger, (literature); *Melobasis nais* Obenberger, (literature); *Melobasis occidentalis* Carter, (Western dist.); *Melobasis prominens* Obenberger, (literature); *Melobasis semimarginata* Obenberger, (literature); *Melobasis victoriae* Obenberger, (literature); *Themognatha aestimata* (Kerremans), (Vic.); *Themognatha conspicillata* (White), (Mallee dist.); *Themognatha pascoei* (Saunders), (Mallee dist.); *Themognatha sanguinea* (Saunders), (Mallee); *Castiarina arida* (Barker), (Vic.); *Castiarina commixta* (Carter), (Gippsland); *Neospades simplex* Blackburn, (Mallee dist.) and *Agrilus frenchi* Blackburn, (Vic.).

Some taxa described as "varieties" have not been investigated critically; *Torresita cuprifera* var. *limbata* Carter, *Melobasis gratiosissima* var. *aurora* Obenberger, *Melobasis gratiosissima* var. *amoris* Obenberger, *Melobasis gratiosissima* var. *amabilior* Obenberger, *Melobasis obscurella* var. *chalcosoma* Obenberger, *Melobasis picticollis* var. *signatipennis* Obenberger, *Melobasis purpurascens* var. *anchoralis* Obenberger, *Melobasis vittata* var. *incipiens* Obenberger and *Stigmodera yarrelli* var. *coerulescens* Carter. As their precise status is unknown they are listed under the name of the species in which they were first described.

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#### References

- Barker, S., 1975. Revision of the genus *Astraeus* Laporte & Gory (Coleoptera: Buprestidae). *Transactions of the Royal Society of South Australia* 99 (3): 105-141.
- Barker, S., 1979. New species and a catalogue of *Stigmodera* (*Castiarina*) (Coleoptera: Buprestidae). *Transactions of the Royal Society of South Australia* 103 (1): 1-23.
- Barker, S., 1980. New species and new synonyms of *Stigmodera* (*Castiarina*) (Coleoptera: Buprestidae). *Transactions of the Royal Society of South Australia* 104 (1): 1-7.
- Barker, S., 1983. New synonyms and new species of *Stigmodera* (*Castiarina*) (Coleoptera: Buprestidae). *Transactions of the Royal Society of South Australia* 107 (3): 139-169.
- Barker, S., 1986. *Stigmodera* (*Castiarina*) (Coleoptera: Buprestidae): taxonomy, new species and a checklist. *Transactions of the Royal Society of South Australia* 110 (1): 1-36.
- Barker, S., 1987. Eighteen new species of *Stigmodera* (*Castiarina*) (Coleoptera: Buprestidae). *Transactions of the Royal Society of South Australia* 111 (3): 133-146.
- Barker, S., 1989. Contributions to the taxonomy of Australian Buprestidae (Coleoptera): New species of *Astraeus* and *Stigmodera* (*Castiarina*) and a key to *Astraeus* (s.s.). *Transactions of the Royal Society of South Australia* 113 (4): 185-194.
- Bedel, L., 1921. *Faune des coléoptères du bassin de la Seine*, Vol. 4, Fasc. 2, sous-ordre *Serricornia* (*Sternoxia*). Paris, 165-362.
- Bellamy, C.L., 1985. A catalogue of the higher taxa of the family Buprestidae (Coleoptera). *Navorsing van die nasionale Museum, Bloemfontein* 4 (15): 405-472.
- Bellamy, C.L., 1986. The higher classification of Australian Buprestidae, with description of a new genus and species (Coleoptera). *Australian Journal of Zoology* 34 (4): 583-600.
- Bellamy, C.L., 1987. A revision of the genus *Synechocera* Deyrolle (Coleoptera: Buprestidae: Agrilinae). *Invertebrate Taxonomy* 1: 17-34.
- Bellamy, C.L., 1988. The classification and phylogeny of the Australian Coroebini Bedel, with a revision of the genera *Paracephala*, *Meliboethon* and *Dinocephalia* (Coleoptera: Buprestidae: Agrilinae). *Invertebrate Taxonomy* 2 (2): 413-453.
- Blackburn, T., 1887. Further notes on Australian Coleoptera, with descriptions of new species. *Transactions of the Royal Society of South Australia* 10: 177-287.
- Blackburn, T., 1888. Notes on Australian Coleoptera, with descriptions of new species. *Proceedings of the Linnean Society of New South Wales* 3 (2): 805-875.
- Blackburn, T., 1890a. Notes on Australian Coleoptera, with descriptions of new species. *Proceedings of the Linnean Society of New South Wales* 4 (5): 1247-1276.
- Blackburn, T., 1890b. Further notes on Australian Coleoptera, with descriptions of new genera and species. *Transactions of the Royal Society of South Australia* 13 (8): 121-160.
- Blackburn, T., 1891. Further notes on Australian Coleoptera, with descriptions of new genera and species. *Transactions of the Royal Society of South Australia* 14 (10): 292-345.
- Blackburn, T., 1892a. Notes on Australian Coleoptera, with descriptions of new species. *Proceedings of the Linnean Society of New South Wales* 6 (10): 479-550.
- Blackburn, T., 1892b. Notes on Australian Coleoptera, with descriptions of new species. *Proceedings of the Linnean Society of New South Wales* 7 (12): 283-300.
- Blackburn, T., 1892c. Further notes on Australian Coleoptera, with descriptions of new genera and species. *Transactions of the Royal Society of South Australia* 15 (11): 20-73.
- Blackburn, T., 1892d. Further notes on Australian Coleoptera, with descriptions of new genera and species. *Transactions of the Royal Society of South Australia* 15 (12): 207-261.
- Blackburn, T., 1893. Further notes on Australian Coleoptera, with descriptions of new genera and species. *Transactions of the Royal Society of South Australia* 17 (13): 130-140.
- Blackburn, T., 1894. Notes on Australian Coleoptera, with descriptions of new species. *Proceedings of the Linnean Society of New South Wales* 9 (15): 85-108.
- Blackburn, T., 1897. Further notes on Australian Coleoptera, with descriptions of new genera and species. *Transactions of the Royal Society of South Australia* 21 (21): 28-39.
- Blackburn, T., 1899. Further notes on Australian Coleoptera, with descriptions of new genera and species. *Transactions of the Royal Society of South Australia* 23 (25): 22-101.
- Blackburn, T., 1900. Further notes on Australian Coleoptera with descriptions of new genera and species. *Transactions of the Royal Society of South Australia* 24 (26): pp. 35-68.
- Blackburn, T., 1901. Further notes on Australian Coleoptera, with descriptions of new genera and species. *Transactions of the Royal Society of South Australia* 25 (28): 15-44.
- Blackburn, T., 1903. Further notes on Australian Coleoptera, with description of new genera and species. *Transactions of the Royal Society of South Australia* 28 (33): 261-309.
- Boheman, C.H., 1858. *Coleoptera, species novae descriptae*. Kongliga



- Svensha Fregatten *Eugenies resa omkring Jorden ... aren 1851-53*, Vol. 2, Zoologi 1, Insecta: 1-112.
- Boisduval, J.B.A., 1835. Faune entomologique de l'Océan Pacifique, deuxième partie. Coléoptères et autres ordres. Voyage de découvertes de l'*Astrolobe* pendant les Années 1826-29 Paris: 1-705.
- Bright, D.E., 1987. The metallic wood-boring beetles of Canada and Alaska (Coleoptera: Buprestidae). *The Insects and Arachnids of Canada* Part 15.
- Carter, H.J., 1906. Notes on the genus *Cardiophorus*; with descriptions of new species of Australian Coleoptera, part 2. *Proceedings of the Linnean Society of New South Wales* 31: 236-260.
- Carter, H.J., 1908. Revision of the genus *Seirotana*, together with descriptions of new species of other Australian Coleoptera, part 2. *Proceedings of the Linnean Society of New South Wales* 33: 392-422.
- Carter, H.J., 1913. Notes on the genus *Stigmodera* with descriptions of eleven new species, and of other Buprestidae, part 3. *Proceedings of the Linnean Society of New South Wales* 37: 497-511.
- Carter, H.J., 1915. Descriptions of six new species of Buprestidae, part 1. *Proceedings of the Linnean Society of New South Wales* 40: 76-82.
- Carter, H. J., 1916. Revision of the genus *Stigmodera*, and descriptions of some new species of Buprestidae (Order Coleoptera). *Transactions of the Royal Society of South Australia* 40: 78-144.
- Carter, H.J., 1920. Notes on some Australian Tenebrionidae, with descriptions of new species; also a new genus and species of Buprestidae, part 2. *Proceedings of the Linnean Society of New South Wales* 45: 222-249.
- Carter, H.J., 1921. Australian Coleoptera: Notes and new species. *Proceedings of the Linnean Society of New South Wales* 46 (3): 301-323.
- Carter, H.J., 1922. Australian Coleoptera: Notes and new species. *Proceedings of the Linnean Society of New South Wales* 47 (2): 65-82.
- Carter, H.J., 1923a. Revision of the genera *Ethon*, *Cisseis* and their allies (Buprestidae) part 2. *Proceedings of the Linnean Society of New South Wales* 48 (2): 159-176.
- Carter, H.J., 1923b. A revision of the Australian species of the genus *Melobasis* (Fam. Buprestidae, Order Coleoptera), with notes on allied genera. *Transactions of the Entomological Society of London*, parts 1 & 2: 64-104.
- Carter, H.J., 1924a. Australian Coleoptera: Notes and new species. No. 3. *Proceedings of the Linnean Society of New South Wales* 49 (2): 19-45.
- Carter, H.J., 1924b. Australian Coleoptera: Notes and new species. No. 4. *Proceedings of the Linnean Society of New South Wales* 49 (4): 521-544.
- Carter, H.J., 1926. Revision of the Australian species of *Anilura* (Fam. Buprestidae) and *Helmis* (Fam. Dryopidae), with notes and descriptions of other Australian Coleoptera, part 2. *Proceedings of the Linnean Society of New South Wales* 51 (2): 50-71.
- Carter, H.J., 1927. Australian Coleoptera: Notes and new species. No. 5. *Proceedings of the Linnean Society of New South Wales* 52 (3): 222-234.
- Carter, H.J., 1928. Revision of the Australian species of the genera *Curis*, *Neocuris* and *Trachys*, together with notes and descriptions of new species of other Coleoptera. *Proceedings of the Linnean Society of New South Wales* 53 (3): 270-290.
- Carter, H.J., 1929. A Check List of the Australian Buprestidae. *Australian Zoologist* 5 (4): 265-304.
- Carter, H.J., 1930a. Australian Coleoptera: Notes and new species. No. 7. *Proceedings of the Linnean Society of New South Wales* 55 (2): 179-190.
- Carter, H.J., 1930b. New Guinea and Australian Coleoptera. Notes and new species. *Proceedings of the Linnean Society of New South Wales* 55 (5): 532-549.
- Carter, H.J., 1931a. Checklist of the Australian Buprestidae, corrigenda, addenda, and synonyms omitted. *Australian Zoologist* 6: 107-108.
- Carter, H.J., 1931b. Notes on the genus *Stigmodera* (Family Buprestidae). Together with descriptions of new species of and a retabulation of the subgenus *Castiarina*. *Australian Zoologist* 6: 337-367.
- Carter, H.J., 1932. New Guinea and Australian Coleoptera. Notes and new species No. 2. *Proceedings of the Linnean Society of New South Wales* 57 (3-4): 101-115.
- Carter, H.J., 1933. Australian Coleoptera. Notes and new species. No. 8. *Proceedings of the Linnean Society of New South Wales* 58 (3-4): 159-180.
- Carter, H.J., 1934. Australian and New Guinea Coleoptera. Notes and new species. No. 3. *Proceedings of the Linnean Society of New South Wales* 59 (3-4): 252-269.
- Carter, H.J., 1935. Australian Coleoptera. Notes and new species. No. 9. *Proceedings of the Linnean Society of New South Wales* 60 (3-4): 179-193.
- Carter, H.J., 1940. Australian Buprestidae and the Junk Catalogue. *Annals and Magazine of Natural History* (11) 6: 380-389.
- Carter, H.J., and Théry, A., 1929. Tables and keys to sub-families, tribes and genera. In H.J. Carter's Checklist of the Australian Buprestidae. *Australian Zoologist* 5 (4): 266-275.
- Chevrolat, L.A.A., 1838. Centurie de Buprestides. *Revue Entomologique* 5: 41-82.
- Cobos, A., 1957. Un genero y dos nuevas especies de Buprestidae de Nueva Guinea. *The Coleopterists' Bulletin* 10 (6): 91-96.
- Cobos, A., 1979. Revision de la subfamilia Trachyinae a niveles supraspecificos (Coleoptera, Buprestidae). *Acta entomologica bohemoslovaca* 76: 414-430.
- Cobos, A., 1980. Ensayo sobre los generos de la subfamilia Polycestinae (Coleoptera, Buprestidae) (Parte 1). *EOS Revista Espanola de Entomologia* 54: 15-94.
- Cobos, A., 1986. Ensayo monografico sobre las *Melanophila* Eschscholtz sensu lato (Coleoptera, Buprestidae). 1 parte: *Melanophila* Eschs., sensu novo; *Trachypteris* Kirby; *Xenomelanophila* Sloop. *EOS Revista Espanola de Entomologia* 62: 45-90.
- Curtis, J., 1825. Illustrations and descriptions of the genera of insects found in Great Britain and Ireland. *British Entomology* 2: 1925.
- Dalman, J.W., 1823. Insectorum, novae species. *Analecta Entomologica, Holmiae* (4): 37-91.
- Dejean, P.F.M.A., 1833. *Catalogue des Coleoptères de la collection de M. le comte Dejean*. Livraisons 1 and 2. Mequignon-Marvis: Paris.
- Dejean, P.F.M.A., 1834. *Catalogue des Coleoptères de la collection de M. le comte Dejean*. Livraison 3. Paris.
- Dejean, P.F.M.A., 1836. *Catalogue des Coleoptères de la collection de M. le comte Dejean*. 3rd. edition. Livraisons 1-4. Paris.
- Dejean, P.F.M.A., 1837. *Catalogue des Coleoptères de la collection de M. le comte Dejean*. 3rd edition 1837: 503 pp.
- Deuquet, C.M., 1956. Notes on Australian Buprestidae with descriptions of three new species and two subspecies of the genus *Stigmodera* subgenus *Castiarina*. *Proceedings of the Linnean Society of New South Wales* 81: 153-156.
- Deyrolle, H., 1864. Description des Buprestides de la Malaisie recueillis par M. Wallace. *Annales de la Société royale entomologique de Belgique* 8: 1-312.
- Donovan, E., 1805. *An epitome of the natural history of the insects of New Holland, New Zealand, Otaheite, and other islands in the Indian, Southern and Pacific Oceans; etc.* The author and F.C. & J. Rivington: London. 91 pp.
- Entomological Society of Victoria, 1986. *Preliminary distribution maps of butterflies in Victoria*. Melbourne.
- Erichson, W.F., 1842. Beiträge zur fauna von Vandiemensland, mit besonderer Berücksichtigung der geographischen Verbreitung der Insecten. *Archiv für Naturgeschichte* 8: 83-287.
- Eschscholtz, J.F., 1829. *Zoologischer Atlas, ... auf der Russisch-Kaiderlichen, Kriegsschlupf Predprietie in den Jahren 1823-1826*. Pt 1. Berlin.
- Fabricius, J.C., 1801. "Systema Eleutheratorum", 2: 1-687.
- Fairmaire, L., 1877a. Synopsis des espèces Australiennes du genre *Curis* de la famille des Buprestides. *Annales de la Société entomologique de France* 7 (5): 327-333.
- Fairmaire, L., 1877b. Synopsis des espèces Australiennes du genre *Neocuris* de la famille des Buprestides. *Annales de la Société entomologique de France* 7 (5): 334-340.
- Gardner, J.A., 1989. Revision of the genera of the Tribe Stigmoderini (Coleoptera: Buprestidae) with a discussion of phylogentic relationships. *Invertebrate Taxonomy* 3: 291-361.
- Gemminger, M. and von Harold, E., 1869. *Catalogus Coleopterorum, hucusque descriptorum, synonymicus et systematicus*. Vol 5. Deyrolle: Paris.
- Gehin, J.J.B., 1855. Coléoptères nouveaux ou peu connus, première décade Buprestiens. *Bulletin de la Société d'histoire naturelle du Département de la Moselle* 7: 53-65.
- Germar, E.F., 1848. Beiträge zur Insectenfauna von Adelaide. *Linnaea Entomologica* 3: 153-247.
- Gestro, R., 1877. Descrizione di una nuova specie del genere *Curis*, della famiglia dei Buprestidi. *Annali del Museo Civico di Storia Naturale di Genova* 9: 429-432.
- Gistel, J.N.F.X., 1834. *Die Insecten-Doubletten aus der Sammlung des Grafen Rudolph von Jenison Watworth, Käfer*. Munchen : 1-35.
- Gistel, J.N.F.X., 1856. *Die Mysterien der europäischen Insectenwelt*. Kempten : 530 pp.



- Gory, H. L., 1841. *Histoire naturelle et iconographie des insectes Coléoptères, supplément aux Buprestides*. Vol. 4: 356 pp. Paris.
- Gory, H.L. and Laporte, F.L., 1837-1840. *Histoire naturelle et iconographie des insectes Coléoptères. Monographie des Buprestides*, Vol 2. (genera paged separately.) Paris. (see Laporte & Gory 1835-1837)
- Guérin, F.E., 1830. Chapter 13, Insectes. Pp. 57-302 in *Duperry, Voyage Autour du Monde ... La Coquille*, Zoologie 2, Part 2.
- Harris, T.H., 1829. Contributions to entomology. No 7. *New England Farmer and Horticultural Journal* 8 (1): 2-3.
- Heller, K.M., 1891. Die Artberechtigung der bisher beschriebenen Castalia-arten. *Deutsche entomologische Zeitschrift, Iris*, 1891: 135-143.
- Hope, F.W., 1831. Synopsis of the new species of Nepaul insects in the collection of Major General Hardwicke by Rev. F.W. Hope, M.A. *Gray's Zoological Miscellany* 1: 21-25.
- Hope, F.W., 1838. *The Coleopterist's Manual, part the second, containing the Predaceous Land and Water Beetles of Linneus and Fabricius*: 1-168, 3 pls.
- Hope, F.W., 1845. Descriptions of some new species of Coleoptera from Adelaide in New Holland. *Transactions of the Entomological Society of London*, part 2, 4 (21): 100-113.
- Hope, F.W., 1846. Descriptions of various new species of Buprestidae from Australia. *Transactions of the Entomological Society of London*, part 3, 4 (30): 208-220.
- Hope, F.W., 1847. Descriptions of various Coleopterous insects from New Holland, collected chiefly by Mr Fortnum, at Adelaide. *Transactions of the Entomological Society of London*, part 5, 4 (46): 280-285.
- Imhoff, L., 1856. *Versuch einer Einführung in das Studium der Koleoptern*. Basel.
- Kerremans, C., 1890a. Espèces inédites du genre *Stigmodera* Eschscholtz. *Annales de la Société royale entomologique de Belgique, (Comptes Rendus)* 34: 40-49.
- Kerremans, C., 1890b. Description d'une nouvelle espèce de *Stigmodérine*. *Annales de la Société royale entomologique de Belgique, (Comptes Rendus)* 34: 140-141.
- Kerremans, C., 1892. Catalogue synonymique des Buprestides. *Mémoires de la Société royale entomologique de Belgique* 1: 1-304.
- Kerremans, C., 1893. Essai de groupement des Buprestides. *Annales de la Société royale entomologique de Belgique* 37: 94-122.
- Kerremans, C., 1898. Buprestides nouveaux de l'Australie et des régions voisines. *Annales de la Société royale entomologique de Belgique* 42: 113-182.
- Kerremans, C., 1900. Buprestides nouveaux et remarques synonymiques. *Annales de la Société royale entomologique de Belgique* 44: 282-351.
- Kerremans, C., 1902. Coleoptera Serricornia. Fam. Buprestidae. *Genera Insectorum*, fasc. 12A: 1-48.
- Kerremans, C., 1903a. Coleoptera Serricornia. Fam. Buprestidae. *Genera Insectorum*, fasc. 12B, fasc. 12C, fasc. 12D: 49-338.
- Kerremans, C., 1903b. Neue oder bekannte Buprestiden des Naturhistorischen Museums zu Hamburg. *Jahrbuch der Hamburgischen wissenschaftlichen Anstalten, Beiheft* 2, 1901 (*Mitteilungen aus dem Naturhistorischen Museum, Hamburg*, 19), (1903): 55-61.
- Kerremans, C., 1906. *Monographie de Buprestides*. Tome I: 1-533, pls 1-10.
- Kirby, W., 1818a. A century of insects, including several new genera described from his cabinet, part 27. *Transactions of the Linnean Society of London* 12: 375-453.
- Kirby, W., 1818b. A description of several new species of insects collected in New Holland by Robert Brown, Esq., F.R.S., Part 28. *Transactions of the Linnean Society of London* 12: 454-487.
- Kirby, W., 1837. *Fauna Boreali - Americana; on the Zoology of the Northern parts of British America, part 4, the Insects*. 325 pp.
- Lacordaire, J.T., 1857. *Histoire naturelle des insectes. Genera des Coléoptères*, vol. 4. Librairie Encyclopédique de Roret: Paris. 579 pp.
- Laporte, F. L. and Gory, H.L., 1835-1837. *Histoire naturelle et iconographie des insectes Coléoptères. Monographie des Buprestides*, Vol 1. (genera paged separately.) Paris.
- Leach, W.E., 1815. Artikel Entomology. Brewster. *Edinburgh Encyclopaedia* 4, Bd 9, 1: 57-172.
- Leconte, J.L. and Horn, G.H., 1883. Classification of the Coleoptera of North America. *Smithsonian Miscellaneous Collections* 26 (507): 1-567.
- Levey, B., 1978a. A taxonomic revision of the genus *Prosppheres* (Coleoptera: Buprestidae). *Australian Journal of Zoology* 26: 713-726.
- Levey, B., 1978b. A new tribe, Epistomentini, of Buprestidae (Coleoptera) with a redefinition of the tribe Chrysochroini. *Systematic Entomology* 3: 153-158.
- Macleay, W.J., 1863. Descriptions of twenty new species of Buprestidae, belonging to the genus *Stigmodera*, from the northern parts of Australia. *Transactions of the Entomological Society of New South Wales* 1: 22-32.
- Macleay, W.J., 1872. Notes on a collection of insects from Gayndah. *Transactions of the Entomological Society of New South Wales* 2: 239-318.
- Macleay, W.J., 1888. *The insects of the vicinity of King's Sound, N.W. Australia*, 3 (Series 2nd.): 1227-1246.
- Macleay, W.S., 1827. Catalogue of insects, collected by Captain King, R.N. Pp. 438-469 in Captain Phillip P. King, *Narrative of a survey of the intertropical and western coasts of Australia, performed between the years 1818-1822*. vol. 2.
- Mannerheim, C.G. von, 1837. Enumeration des Buprestides, et description de quelques nouvelles espèces de cette tribu de la famille des Stemoxos, de la collection de M. le comte Mannerheim. *Bulletin de la Société Impériale des Naturalistes de Moscou (Byulletin Moskovskoe obsnch estvo ispytalelei prirody)* 10 (8): 3-126.
- Masters, G., 1886. Catalogue of the described Coleoptera of Australia, Part 3, Family Buprestidae. *Catalogus Coleopterorum*, 1886: 67-106.
- Matthews, E.G., 1985. *A guide to the genera of beetles of South Australia. Part 4. Special Education Series No. 7*. South Australian Museum: Adelaide. 68 pp.
- Murray, A., 1852. Description de deux Buprestides nouveaux. *Annales de la Société entomologique de France* 10 (2): 253-255.
- Obenberger, J., 1920a. Revision du genre *Bubastes* L. & G. (Col. Buprestidae). *Annales de la Société entomologique de France* 89: 89-108.
- Obenberger, J., 1920b. Ueber neue Buprestidengattungen (Col.). *Entomologische mitteilungen* 9: 157-172.
- Obenberger, J., 1922a. Studien über die Buprestiden. *Entomologische Blätter für Biologie und Systematik der Käfer* 18 (Heft 2): 67-73.
- Obenberger, J., 1922b. Beiträge zur Kenntnis der Buprestiden (Col.). *Archiv für Naturgeschichte* 88 (A), Heft 12: 64-168.
- Obenberger, J., 1923a. Une série de nouveaux genres de Buprestides. *Acta Entomologica Musei Nationalis Pragae, Cechoslovakensis (Sbornik Entomologického oddeleni Národního musea v Praze)* 1: 13-44.
- Obenberger, J., 1923b. Descriptions of new Australian Buprestidae. *Acta Entomologica Musei Nationalis Pragae, Cechoslovakensis (Sbornik Entomologického oddeleni Národního musea v Praze)* 1: 72-81.
- Obenberger, J., 1924a. Kritische Studien über die Buprestiden (Col.). *Archiv für Naturgeschichte* 90 (A), Heft 3: 1-171.
- Obenberger, J., 1924b. Deuxième série de nouveaux genres de Buprestidae. *Acta Entomologica Musei Nationalis Pragae Cechoslovakensis (Sbornik Entomologického oddeleni Národního musea v Praze)* 2 (12): 7-44.
- Obenberger, J., 1926. Buprestidae 1. Pars 84 in Junk, W. and Schenkling, S. (eds) *Coleopterorum Catalogus*.
- Obenberger, J., 1928. Opuscula Buprestologica I. Beiträge zur Kenntnis der Buprestiden (Col.). *Archiv für Naturgeschichte* 92 (A), Heft 10 (Aug 1928): 113-224, (Heft 11 (Sep 1928): 225-350.
- Obenberger, J., 1930. Buprestidae 2. Pars 111 in Junk, W. and Schenkling, S. (eds) *Coleopterorum Catalogus*.
- Obenberger, J., 1933. Notes on the Australian genus *Stigmodera* Eschsch. (Col. Bupr.). *Casopis Československé společnosti entomologické* 30: 65-76.
- Obenberger, J., 1934. Buprestidae 3. Pars 132 in Junk, W. and Schenkling, S. (eds) *Coleopterorum Catalogus*.
- Obenberger, J., 1935a. Dalsi Novy Krasce Z Australie. (Bupr.). *Casopis Československé společnosti entomologické* 32: 36-36.
- Obenberger, J., 1935b. Buprestidae 4. Pars 143 in Junk, W. and Schenkling, S. (eds) *Coleopterorum Catalogus*.
- Obenberger, J., 1936. Buprestidae 5. Pars 152 in Junk, W. and Schenkling, S. (eds) *Coleopterorum Catalogus*.
- Obenberger, J., 1937. Buprestidae 6. Pars 157 in Junk, W. and Schenkling, S. (eds) *Coleopterorum Catalogus*.
- Obenberger, J., 1942. De generis *Melobasis* Cast. et Gory speciebus novis (Col. Bupr.). *Acta Entomologica Musei Nationalis prague, Cechoslovakensis (Sbornik Entomologického oddeleni Národního musea v Praze)* 20: 99-106.
- Obenberger, J., 1943. De genere novo Buprestidarum ex Australia (Agnilini), *Acta Societatis entomologicue Bohemiae [Casopis Československé společnosti entomologické]* 40: 33-35.
- Obenberger, J., 1947. Sur un genre nouveau de Buprestides, *Xenocyria* n. (Col.). *Acta Entomologica Musei Nationalis Pragae, Cechoslovakensis (Sbornik Entomologického oddeleni Národního musea v Praze)* 25: 127-130.



- Obenberger, J., 1958. Un genre nouveau de la sous-famille Polycestinae de l'Australie (Col.: Buprestidae). *Acta Entomologica Musei Nationalis Pragae, Cechoslovakensis* (Sbornik Entomologického oddeleni Národního muzea v Praze) 32: 487-490.
- Oke, C., 1928. Notes on Australian Coleoptera, with descriptions of new species Part 1. *Proceedings of the Linnean Society of New South Wales* 53 (2): 1-30.
- Redtenbacher, L., 1867. Coleoptera. *Reise der ... fregatte Novara um die Erde, in 1857-1859, Zoologischer Theil*, Bd.1 Abt.: 1-249.
- Saunders, E., 1868a. Descriptions of fifty new species of the genus *Stigmodera*. *Journal of the Linnean Society, Zoology* 9: 460-483, pls 9-10.
- Saunders, E., 1868b. A revision of the Australian Buprestidae described by the Rev. F. W. Hope. *Transactions of the Entomological Society of London*, part 1, 1868: 1-66, pls 1-4.
- Saunders, E., 1869. *Buprestidae. Part 1. Insecta Saundersiana; or characters of undescribed species in the collection of William Saunders*. John van Voorst: London. 3: 1-27.
- Saunders, E., 1871. *Catalogus Buprestidarum synonymicus et systematicus*. E. W. Janson: London. 1-171.
- Saunders, E., 1872. Descriptions of twenty new species of Buprestidae. *Transactions of the Entomological Society of London*, part 3: 239-253.
- Saunders, E., 1876. Descriptions of nine new species of Buprestidae. *Entomologists' Monthly Magazine* 13: 155-158.
- Semenov-Tian-Shianskij, A., 1935. *Analecta coleopterologica. Revue Russe d'Entomologie* 25 (3-4): 271-281.
- Solier, A.J.J., 1833. Essai sur les Buprestides. *Annales de la Société entomologique de France* 2: 261-316.
- Théry, A., 1895. Notes sur quelques Coléoptères et descriptions de deux espèces nouvelles. *Bulletin de la Société entomologique de France* 1895: 326-329.
- Théry, A., 1911. Buprestides nouveaux (Deuxième partie). *Mémoires de la Société royale entomologique de Belgique* 18: 1-58.
- Théry, A., 1923. Note on the genus *Synechocera* with description of a new species. *Proceedings of the Linnean Society of New South Wales* 48 (9): 517-518.
- Théry, A., 1928. A new buprestid from Australia. *Proceedings of the Linnean Society of New South Wales* 53 (4): 456-457.
- Théry, A., 1929. In H. J. Carter's "A Checklist of the Australian Buprestidae". Tables and keys to sub-families, tribes and genera. *Australian Zoologist* 5: 265-275.
- Théry, A., 1931. Description du genre *Brachycisseis* (Col. Buprestidae). *Bulletin de la Société entomologique de France* 1931 (2): 1-4.
- Thomson, C.G., 1864. *Skandinavien Coleoptera, Synoptiskt Bearbetade*. 6. Lund. 385 pp.
- Thomson, J., 1856. Description de dix Coléoptères. *Revue et Magasin de Zoologie* 8: 112-118.
- Thomson, J., 1857. Description de Trente-trois espèces de Coléoptères. *Archives Entomologique* 1: 109-127.
- Thomson, J., 1878. *Typi Buprestidarum Musaei Thomsoniani*. Paris.
- Thomson, J., 1879a. *Typi Buprestidarum Musaei Thomsoniani. Appendix 1a*. Paris.
- Thomson, J., 1879b. Descriptions de trois nouvelles espèces de Buprestides du genre *Stigmodera*. *Bulletin de la Société entomologique de France* 9 (5): 13-15.
- Thomson, J., 1879c. La description d'une nouvelle espèce de Buprestides. *Bulletin de la Société entomologique de France* 9 (5): 93-94.
- Thomson, J., 1879d. La description de deux nouvelles espèces de Buprestides. *Bulletin de la Société entomologique de France* 9 (5): 124-126.
- Toyama, M., 1987. The systematic positions of some buprestid genera (Coleoptera, Buprestidae). *Elytra* 15 (1/2): 1-11.
- van de Poll, J.R.H.N., 1886a. Description of three new species and a synopsis of the buprestid genus *Nascio* Laporte & Gory. Note 14. *Notes from the Leyden Museum* 8: 121-125.
- van de Poll, J.R.H.N., 1886b. Description of three new species and a synopsis of the buprestid genus *Astraeus* Laporte & Gory. Note 25. *Notes from the Leyden Museum* 8: 175-180.
- van de Poll, J.R.H.N., 1889. Monographical essay on the Australian buprestid genus *Astraeus*. *Tijdschrift voor entomologie* 32: 79-110.
- Waterhouse, C.O., 1874. Notes on Australian Coleoptera with descriptions of new species. *Transactions of the Entomological Society of London*, part 4: 535-548.
- Waterhouse, C.O., 1882. Descriptions of new Buprestidae. *Annals and Magazine of Natural History* (5) 9: 50-52.
- Waterhouse, C.O., 1887a. XI. New genera and species of Buprestidae. *Transactions of the Entomological Society of London*, 1887: 177-184.
- Waterhouse, C.O., 1887b. Descriptions of new Coleoptera in the British Museum. *Annals and Magazine of Natural History* (5) 19: 289-295.
- Waterhouse, C.O., 1889. Insecta, Coleoptera, Buprestidae. *Biologia Centrali-Americana* 3 (1): 49-192.
- White, A., 1843a. Descriptions of apparently new species and varieties of insects and other Annulosa, principally from the collection in the British Museum. *Annals and Magazine of Natural History* 12: 342-346.
- White, A., 1843b. Descriptions of new or unfigured species of Coleoptera from Australia. In J. Lort Stokes, *Discoveries in Australia, with an account of the Coasts and Rivers explored and surveyed during the Voyage of H.M.S. Beagle in the years 1837-43* 1: 505-512, pls 1-2.
- White, A., 1859a. *Spicilegium Entomologica. IV. Diagnoses Coleopterorum quatuor*. *Annals and Magazine of Natural History* 3 (3): 290-291.
- White, A., 1859b. Descriptions of unrecorded species of Australian Coleoptera of the families Carabidae, Buprestidae, Lamellicornia, etc. *Proceedings of the Zoological Society of London*, part 27: 117-123.
- Williams, G.A. & Watkins, S., 1985. A new species of *Nascioides* Kerremans (Coleoptera: Buprestidae). *Journal of the Australian Entomological Society* 24: 255-259.
- Williams, G.A. & Weir, T.A., 1987. Four new species and new records of Australian Mastogeniinae (Coleoptera: Buprestidae). *Journal of the Australian Entomological Society* 26: 153-159.
- Williams, G.A., 1987. A revision of the genus *Nascioides* Kerremans (Coleoptera: Buprestidae). *Invertebrate Taxonomy* 1: 121-145.

## CHECKLIST OF THE VICTORIAN BUPRESTIDAE

## Family BUPRESTIDAE Eschscholtz

Buprestides Eschscholtz, 1829: 239.

## Subfamily POLYCESTINAE Lacordaire

Polycestides Lacordaire, 1857: 61.

## Tribe ASTRAEUSINI Cobos

Astraeusini Cobos, 1980: 28.

Buprestes (part) Carter and Théry, 1929: 270.

## ASTRAEUS Laporte and Gory

Astraeus Laporte and Gory, 1837: 1.

Asthraeus Imhoff, 1856: 46 (misspelling).

Conognatha auctorum.

## Subgenus ASTRAEUS Laporte and Gory

- Astraeus* (*Astraeus*) *badeni* van de Poll (Map 1)  
*Astraeus badeni* van de Poll, 1889: 93.  
*Astraeus badeni* var. *disjunctus* Obenberger, 1928: 204 (Barker, 1989: 188).
- Astraeus* (*Astraeus*) *dilutipes* van de Poll (Map 2)  
*Astraeus samouelli* var. *dilutipes* van de Poll, 1886b: 180.  
*Astraeus strandi* Obenberger, 1928: 205 (Barker, 1975: 123).
- Astraeus* (*Astraeus*) *jansonii* van de Poll (Map 3)  
*Astraeus jansonii* van de Poll, 1889: 94.  
*Astraeus tepperi* Blackburn, 1890a: 1258 (Barker, 1975: 133).
- Astraeus* (*Astraeus*) *major* Blackburn (Map 4)  
*Astraeus major* Blackburn, 1890a: 1257.  
*Astraeus navarchis* var. *major*.—Carter, 1929: 282 (Barker, 1975: 127).
- Astraeus* (*Astraeus*) *mastersii* Macleay (Map 5)  
*Astraeus mastersii* Macleay, 1872: 239.  
*Astraeus samouelli* van de Poll, 1886b: 176 (Barker, 1975: 122).
- Astraeus splendens* van de Poll, 1889: 108 (Barker, 1975: 122).
- Astraeus simplex* Blackburn, 1892d: 211 (Barker, 1975: 122).
- Astraeus mastersi* auctorum.
- Astraeus* (*Astraeus*) *navarchis* (Thomson) (Map 6)  
*Conognatha navarchis* Thomson, 1856: 115, pl. 6, fig. 2.  
*Astraeus* (*Astraeus*) *navarchis* (Thomson) (Barker, 1975: 114, 127).



- Astraeus (Astraeus) pygmaeus** van de Poll (Map 7)  
*Astraeus pygmaeus* van de Poll, 1886b: 178.  
*Astraeus pygmaeus* var. *subfasciatus* van de Poll, 1886b: 178 (Barker, 1975: 118).  
*Astraeus samouellei* var. *pygmaeus*. — Blackburn, 1890a: 1256.  
*Astraeus samouelli* var. *pygmaeus*. — Kerremans, 1892: 102 (misspelling).  
*Astraeus pygmaeus*. — Kerremans, 1903a: 148 (misspelling).  
*Astraeus pygmaeus* var. *subfasciatus*. — Kerremans, 1903a: 148 (misspelling).  
*Astraeus pygmaeus*. — Carter, 1929: 282 (misspelling).  
*Astraeus pygmaeus* var. *subfasciatus*. — Carter, 1929: 282 (misspelling).

Subgenus **DEPOLLUS** Barker

*Depollus* Barker, 1975: 105.

- Astraeus (Depollus) irregularis** van de Poll (Map 8)  
*Astraeus irregularis* van de Poll, 1889: 86.

Tribe **PROSPHERINI** Cobos

Prospherini Cobos, 1980: 84.

Polycetae (part) Carter and Théry, 1929: 269.

**PROSPHERES** Saunders

*Prospheres* Saunders, 1868b: 11.

*Phospheres* Thomson, 1878: 61 (misspelling).

- Prospheres aurantiopicta** (Gory and Laporte) (Map 9)  
*Buprestis aurantiopicta* Gory and Laporte, 1837: 132.  
*Prospheres aurantiopicta* (Gory and Laporte) (Saunders, 1868b: 7).  
*Stigmodera gulielmi* White, 1859b: 120 (Levey, 1978a: 713, 721).  
*Buprestis moesta* Carter, 1915: 77 (Levey, 1978a: 713, 721).  
*Prospheres aurantiopictus* var. *caledonicus* Obenberger, 1924a: 32 (Levey, 1978a: 713, 721).

Subfamily **MASTOGENINAE** Leconte and Horn  
Mastogeninae Leconte and Horn, 1883: 199 (as tribe).

Tribe **MASTOGENINI**

**HELPERELLA** Cobos

*Helperella* Cobos 1957: 91.

- Helperella frenchi** (Théry) (Map 10)  
*Mastogenius frenchi* Théry, 1928: 456.  
*Helperella frenchi* (Théry) (Williams and Weir, 1987: 159).

Subfamily **CHALCOPHORINAE** Lacordaire  
Chalcophorides Lacordaire, 1857: 14.

Tribe **EPISTOMENTINI** Levey

Epistomentini Levey, 1978b: 155.

**CYRIA** Solier

*Cyria* Solier, 1833: 269.

*Euchloris* Billberg teste Mannerheim, 1837: 30.

*Cyrioides* Carter, 1920: 222.

*Xenocyria* Obenberger, 1947: 129.

- Cyria imperialis** (Fabricius) (Map 11)  
*Buprestis imperialis* Fabricius, 1801: 204.  
*Cyria imperialis* (Fabricius) (Saunders, 1868b: 3).

**DIADOXUS** Thomson

*Diadoxus* Thomson, 1878: 15.

*Stigmodera* auctorum.

*Anthaxia* auctorum.

- Diadoxus erythrurus** (White) (Map 12)  
*Stigmodera erythrura* White, 1843b: 507, pl.1, fig. 7.  
*Diadoxus erythrurus* (White) (Saunders, 1868b: 4).  
**Diadoxus jungi** Blackburn (Map 13)  
*Diadoxus jungi* Blackburn, 1899: 28.  
**Diadoxus scalaris** (Gory and Laporte) (Map 14)  
*Buprestis scalaris* Gory and Laporte, 1837: 141.  
*Diadoxus scalaris* (Gory and Laporte) (Saunders, 1868b: 4).  
*Diadoxus scalaris* var. *blackburni* Obenberger, 1923b: 72.

Tribe **CHALCOPHORINI**

**IRIDOTAENIA** Deyrolle

*Iridotaenia* Deyrolle, 1864: 25.

*Paracupta* auctorum.

- Iridotaenia albivittis** (Hope) (Map 15)  
*Buprestis albivittis* Hope, 1846: 214.  
*Iridotaenia albivittis* (Hope) (Carter, 1929: 301).  
*Chrysodema pyritosa* Boheman, 1858: 58.

**CHALCOTAENIA** Deyrolle

*Chalcotaenia* Deyrolle, 1864: 12.

*Chalcophora* auctorum.

- Chalcotaenia exilis** (Blackburn) (Map 16)  
*Chalcophora exilis* Blackburn, 1894: 98.

Tribe **JULODIMORPHINI** Kerremans

Julodimorphites Kerremans, 1902: 16.

Julodimorphae Carter and Théry, 1929: 271.

**JULODIMORPHA** Thomson

*Julodimorpha* Thomson, 1878: 51.

- Julodimorpha bakewellii** (White) (Map 17)  
*Stigmodera bakewellii* White, 1859a: 290.  
*Julodimorpha bakewellii* (White) (Thomson, 1878: 51).  
*Julodimorpha saundersii* Thomson, 1878: 51 (Obenberger, 1926: 35).  
*Julodimorpha bakewellii* auctorum.

Subfamily **BUPESTINAE** Lacordaire

Buprestides Lacordaire, 1857: 33.

Tribe **BUBASTINI** Obenberger

Bubastini Obenberger, 1920a: 89.

Buprestes (part) Carter and Théry, 1929: 270.

**NEOBUBASTES** Blackburn

*Neobubastes* Blackburn, 1892d: 213.

*Castelnaudina* Obenberger, 1924b: 17.

*Castelnaudia* Obenberger, 1923a: 14 (preocc.).

**Neobubastes aureocincta** Blackburn

*Neobubastes aureocincta* Blackburn, 1892d: 213.

*Neobubastes aureocincta* var. *scutalis* Blackburn, 1892d: 213 (Obenberger, 1930: 303).

*Castelnaudia australasiae* Obenberger, 1923a: 15.

**NOTOBUBASTES** Carter

*Notobubastes* Carter, 1924a: 24.

**Notobubastes orientalis** Carter

*Notobubastes orientalis* Carter, 1924a: 25.



**BUBASTES** Laporte and Gory

*Bubastes* Laporte and Gory, 1836: 1.  
*Neraldus* Théry, 1911: 17.

**Bubastes globicollis** Thomson

(Map 18)

*Bubastes globicollis* Thomson, 1879a: 14.  
*Bubastes simillimus* Obenberger, 1922b: 81.

## Tribe DICERCINI Kerremans

*Dicercites* Kerremans, 1903a: 124.  
*Buprestes* (part) Carter and Théry, 1929: 270.

**MICROCASTALIA** Heller

*Microcastalia* Heller, 1891: 135.  
*Bubastodes* Blackburn, 1892d: 212.

**Microcastalia globithorax** (Thomson)

(Map 19)

*Castalia globithorax* Thomson, 1878: 46.  
*Microcastalia globithorax* (Thomson) (Kerremans, 1906: 421).  
*Bubastodes sulcicollis* Blackburn, 1892d: 212.

## Tribe BUPRESTINI

*Buprestes* (part) Carter and Théry, 1929: 270.

**NEOBUPRESTIS** Kerremans

*Neobuprestis* Kerremans, 1903a: 136.  
*Sphenoptera* auctorum.  
*Strigoptera* auctorum.

**Neobuprestis frenchi** (Blackburn)

(Map 20)

*Strigoptera frenchi* Blackburn, 1892a: 500.  
*Neobuprestis frenchi* (Blackburn) (Carter, 1924b: 524).

**Neobuprestis marmorata** (Blackburn)

(Map 21)

*Strigoptera marmorata* Blackburn, 1892a: 501.  
*Neobuprestis marmorata* (Blackburn) (Carter, 1924b: 524).

**Neobuprestis peroni** (Gory and Laporte)

(Map 22)

*Stigmodera peroni* Gory and Laporte, 1837: 48.  
*Neobuprestis peroni* (Gory and Laporte) (Obenberger, 1930: 363).  
*Strigoptera australis* Blackburn, 1892a: 501 (Obenberger, 1930: 363).

**NASCIO** Laporte and Gory

*Nascio* Laporte and Gory, 1837: 1.  
*Geronia* Dejean, 1837: 89.

**Nascio vetusta** (Boisduval)

(Map 23)

*Buprestis vetusta* Boisduval, 1835: 85.  
*Nascio vetusta* (Boisduval) (Gory and Laporte, 1837: 2).  
*Nascio lunaris* Kerremans, 1900: 294 (Obenberger, 1930: 367).  
*Nascio vetusta* var. *brunneipuncta* Obenberger, 1928: 204 (Obenberger, 1930: 368).

**NASCIODES** Kerremans

*Nascioides* Kerremans, 1903a: 147.

**Nascioides parryi** (Hope)

(Map 24)

*Stigmodera parryi* Hope, 1845: 103.  
*Nascioides parryi* (Hope) (Kerremans, 1903a: 147).  
*Stigmodera saundersii* Hope, 1846: 213 (Williams, 1987: 137).

**Nascioides quadrinotatus** (van de Poll)

(Map 25)

*Nascio quadrinotata* van de Poll, 1886a: 123.  
*Nascioides quadrinotatus* (van de Poll) (Williams, 1987: 139).

**BALTHASARELLA** Obenberger

*Balthasarella* Obenberger, 1958: 487.

**Balthasarella melandryoides** Obenberger

*Balthasarella melandryoides* Obenberger, 1958: 489.

## Tribe MELANOPHILINI Bedel

*Melanophilini* Bedel, 1921: 171.  
*Anthaxiae* (part) Carter and Théry, 1929: 270.

**TORRESITA** Gemminger and Harold

*Torresita* Gemminger and Harold, 1869: 1382 (not described).  
*Plagiopoe* Saunders, 1868b: 12 (not described, preocc.).

**Torresita cuprifera** (Kirby)

(Map 26)

*Buprestis cuprifera* Kirby, 1818b: 457.  
*Torresita cuprifera* (Kirby) (Gemminger and Harold, 1869: 1382).  
*Buprestis chrysochloris* Gory and Laporte, 1837: 122.  
*Melobasis dilatata* Redtenbacher, 1867: 85.  
*Torresita aenea* Thomson, 1879a: 23.  
*Torresita cuprifera* var. *limbata* Carter, 1934: 258.

**PSEUDANILARA** Théry

*Pseudanilara* Théry, 1911: 32.  
*Neotorresita* Obenberger, 1923a: 19.

**Pseudanilara bicolor** Carter

(Map 27)

*Pseudanilara bicolor* Carter, 1924b: 524.

**Pseudanilara cupripes** (Macleay)

(Map 28)

*Anthaxia cupripes* Macleay, 1872: 242.  
*Pseudanilara cupripes* (Macleay) (Carter, 1924b: 526).

*Neocuris dilaticollis* Blackburn, 1892c: 42.

*Melobasis laticeps* Kerremans, 1898: 126.

*Melanophila australasiae* Kerremans, 1903b: 59.

*Neotorresita achardi* Obenberger, 1923a: 20.

*Neotorresita achardi* ssp. *occidentis* Obenberger, 1924a: 69.

**Pseudanilara pilosa** (Carter)

(Map 29)

*Neocuris pilosa* Carter, 1913: 510.

*Pseudanilara pilosa* (Carter) (Carter, 1928: 279)

**Pseudanilara purpureicollis** (Macleay)

(Map 30)

*Anthaxia purpureicollis* Macleay, 1872: 242.

*Pseudanilara purpureicollis* (Macleay) (Carter, 1924b: 525).

*Anthaxia nigra* Macleay, 1872: 243.

*Neocuris nigricans* Blackburn, 1892c: 43.

*Pseudanilara roberti* Théry, 1911: 32.

**MELOBASIS** Gory and Laporte

*Melobasis* Gory and Laporte, 1837: 118.  
*Abrobapta* Dejean, 1837: 90.

## Subgenus MELOBASIS Gory and Laporte

**Melobasis** (s. str.) **abnormis** Carter

(Map 31)

*Melobasis abnormis* Carter, 1923b: 94.

**Melobasis** (s. str.) **andersoni** Blackburn

(Map 32)

*Melobasis andersoni* Blackburn, 1887: 234.

**Melobasis** (s. str.) **costata** Macleay

(Map 33)

*Melobasis costata* Macleay, 1872: 240.

**Melobasis** (s. str.) **cupreovittata** Saunders

(Map 34)

*Melobasis cupreovittata* Saunders, 1876: 155.

*Melobasis vittigera* Thomson, 1879a: 16.

*Melobasis obsoleta* Thomson, 1879a: 15.

**Melobasis** (s. str.) **cupriceps** (Kirby)

(Map 35)

*Buprestis cupriceps* Kirby, 1818b: 457.

*Melobasis cupriceps* (Kirby) (Saunders, 1868b: 15).

*Buprestis viridinitens* Boisduval, 1835: 94.

*Buprestis iridescens* Gory and Laporte, 1837: 121.

**Melobasis** (s. str.) **cuprifera** (Gory and Laporte)

(Map 36)

*Buprestis cuprifera* Gory and Laporte, 1837: 119.

*Melobasis cuprifera* (Gory and Laporte) (Kerremans, 1892: 104).

*Buprestis propinqua* Gory and Laporte, 1837: 120.

*Buprestis porteri* Hope, 1846: 215.

*Buprestis verna* Hope, 1846: 214.

*Buprestis suaveola* Germar, 1848: 176.



- Melobasis goryi* Saunders, 1871: 44.  
*Melobasis prasina* Thomson, 1879a: 17.  
**Melobasis (s. str.) fulgurans** Thomson (Map 37)  
*Melobasis fulgurans* Thomson, 1879a: 20.  
*Melobasis subfulgurans* Thomson, 1879a: 21.  
*Melobasis placida* Thomson, 1879a: 17.  
*Melobasis intricata* Blackburn, 1887: 243.  
*Melobasis beltanensis* Blackburn, 1892a: 499.  
*Melobasis subcyanea* Blackburn, 1892b: 287.  
*Melobasis coeruleiventris* Kerremans, 1898: 123.  
*Melobasis blackburni* Kerremans, 1903a: 159.  
**Melobasis (s. str.) gratiosissima** Thomson (Map 38)  
*Melobasis gratiosissima* Thomson, 1879a: 18.  
*Melobasis speciosa* Blackburn, 1887: 245.  
*Melobasis amabilis* Kerremans, 1898: 128 (Obenberger, 1930: 431).  
*Melobasis gratiosissima* var. *aurora* Obenberger, 1942: 103.  
*Melobasis gratiosissima* var. *amorsa* Obenberger, 1942: 104.  
*Melobasis gratiosissima* var. *amabilior* Obenberger, 1942: 104.  
**Melobasis (s. str.) hypocrita** Erichson (Map 39)  
*Melobasis hypocrita* Erichson, 1842: 135.  
*Melobasis acuta* Kerremans, 1900: 296.  
**Melobasis (s. str.) ignipicta** Kerremans (Map 40)  
*Melobasis ignipicta* Kerremans, 1900: 297.  
**Melobasis (s. str.) innocua** Thomson (Map 41)  
*Melobasis innocua* Thomson, 1879a: 20.  
**Melobasis (s. str.) lathamii** (Gory and Laporte) (Map 42)  
*Buprestis lathamii* Gory and Laporte, 1837: 120.  
*Melobasis lathamii* (Gory and Laporte) (Saunders, 1868b: 17).  
*Melobasis rubromarginata* Saunders, 1876: 156.  
*Melobasis laeta* Saunders, 1876: 156.  
*Melobasis soror* Blackburn, 1887: 237.  
*Melobasis bicolor* Blackburn, 1891: 295.  
*Melobasis costipennis* Kerremans, 1898: 124.  
**Melobasis (s. str.) monticola** Blackburn (Map 43)  
*Melobasis monticola* Blackburn, 1892a: 496.  
**Melobasis (s. str.) naias** Obenberger  
*Melobasis naias* Obenberger, 1942: 102.  
**Melobasis (s. str.) nervosa** (Boisduval) (Map 44)  
*Buprestis nervosa* Boisduval, 1835: 77.  
*Melobasis nervosa* (Boisduval) (Saunders, 1868b: 18).  
**Melobasis (s. str.) nitidiventris** Kerremans (Map 45)  
*Melobasis nitidiventris* Kerremans, 1898: 122.  
**Melobasis (s. str.) nobilitata** Thomson (Map 46)  
*Melobasis nobilitata* Thomson, 1879a: 22.  
**Melobasis (s. str.) obscurella** Thomson (Map 47)  
*Melobasis obscurella* Thomson, 1879a: 19.  
*Melobasis viridiobscura* Thomson, 1879a: 19.  
*Melobasis rotundicollis* Blackburn, 1887: 241.  
*Melobasis violacea* Kerremans, 1898: 123.  
*Melobasis obscurella* var. *ignicollis* Carter, 1923b: 72 (Obenberger, 1930: 433).  
*Melobasis obscurella* var. *chalcosoma* Obenberger, 1942: 102.  
**Melobasis (s. str.) occidentalis** Carter  
*Melobasis occidentalis* Carter, 1923b: 95.  
**Melobasis (s. str.) picticollis** Carter (Map 48)  
*Melobasis picticollis* Carter, 1923b: 85.  
*Melobasis picticollis* var. *signatipennis* Obenberger, 1942: 102.  
**Melobasis (s. str.) prisca** Erichson (Map 49)  
*Melobasis prisca* Erichson, 1842: 135.  
*Melobasis semistriata* Blackburn, 1887: 235.  
**Melobasis (s. str.) prominens** Obenberger  
*Melobasis prominens* Obenberger, 1942: 101.  
**Melobasis (s. str.) purpurascens** (Fabricius) (Map 50)  
*Buprestis purpurascens* Fabricius, 1801: 217.  
*Melobasis purpurascens* (Fabricius) (Kerremans, 1892: 106).  
*Buprestis splendida* Donovan, 1805: pl. 7, fig. 4.  
*Buprestis purpureosignata* Laporte and Gory, 1837: 6.  
*Melobasis faceta* Thomson, 1879a: 18.  
*Melobasis miranda* Kerremans, 1898: 128.  
*Melobasis purpurascens* var. *anchoralis* Obenberger, 1942: 104.  
**Melobasis (s. str.) semimarginata** Obenberger  
*Melobasis semimarginata* Obenberger, 1942: 103.  
**Melobasis (s. str.) sexplagiata** (Gory and Laporte) (Map 51)  
*Buprestis sexplagiata* Gory and Laporte, 1837: 124.  
*Melobasis sexplagiata* (Gory and Laporte) (Kerremans, 1892: 106).  
*Buprestis pyritosa* Hope, 1846: 214.  
*Melobasis pretiosa* Blackburn, 1887: 244.  
*Melobasis auronotata* Kerremans, 1898: 127.  
**Melobasis (s. str.) simplex** (Germar) (Map 52)  
*Buprestis simplex* Germar, 1848: 175.  
*Melobasis simplex* (Germar) (Kerremans, 1892: 106).  
*Melobasis viridis* Saunders, 1876: 158.  
*Melobasis obscura* Saunders, 1876: 157.  
*Melobasis sordida* Blackburn, 1887: 238.  
*Melobasis semisuturalis* Blackburn, 1887: 246.  
*Melobasis concolor* Kerremans, 1898: 125.  
*Melobasis viridiventris* Kerremans, 1898: 124.  
*Melobasis vicina* Kerremans, 1898: 126.  
**Melobasis (s. str.) vertebralis** Carter (Map 53)  
*Melobasis vertebralis* Carter, 1923b: 83.  
**Melobasis (s. str.) victoriae** Obenberger  
*Melobasis victoriae* Obenberger, 1942: 102.  
**Melobasis (s. str.) viridiceps** Saunders (Map 54)  
*Melobasis viridiceps* Saunders, 1876: 157.  
**Melobasis (s. str.) vittata** Blackburn (Map 55)  
*Melobasis vittata* Blackburn, 1887: 242 (replacement name).  
*Melobasis cupreovittata* Thomson, 1879a: 22 (preocc.).  
*Melobasis inflammabilis* Thomson, 1879a: 19 (Carter, 1931: 108).  
*Melobasis viridicollis* Kerremans, 1898: 127 (Carter, 1931: 108).  
*Melobasis affinis* Kerremans, 1903a: 159 (Carter, 1931: 108).  
*Melobasis vittata* var. *incipiens* Obenberger, 1942: 106.  

Tribe ANTHAXIINI Laporte and Gory  
 Anthaxites Laporte and Gory, 1837: 1.  
 Anthaxiae (part) Carter and Théry, 1929: 270.

ANILARA Thomson  
*Anilara* Thomson, 1879a: 28.

**Anilara adelaidae** (Hope) (Map 56)  
*Anthaxia adelaidae* Hope, 1846: 216.  
*Anilara adelaidae* (Hope) (Kerremans, 1892: 130).  
*Anilara deyrollei* Thomson, 1879a: 29.  
**Anilara aeraria** Carter (Map 57)  
*Anilara aeraria* Carter, 1926: 55.  
**Anilara angusta** Blackburn (Map 58)  
*Anilara angusta* Blackburn, 1891: 296.  
*Anilara cuprescens* Kerremans, 1898: 131.  
*Anilara cyphogastra* Théry, 1911: 29.  
**Anilara anthaxoides** Théry (Map 59)  
*Anilara anthaxoides* Théry, 1911: 31.  
**Anilara longicollis** Théry (Map 60)  
*Anilara longicollis* Théry, 1911: 26.  
**Anilara obscura** (Macleay) (Map 61)  
*Melobasis obscura* Macleay, 1872: 242.  
*Anilara obscura* (Macleay) (Carter, 1923b: 70).  
*Anilara platessa* Thomson, 1879a: 29 (Carter, 1940: 383).  
*Anilara soror* Blackburn, 1891: 296 (Carter, 1940: 383).  
*Anilara uniformis* Kerremans, 1898: 131 (Carter, 1940: 383).  
*Anilara deyrollei* Kerremans, 1903a: 170 (Carter, 1940: 383).  
*Anilara deplanata* Théry, 1911: 28 (Carter, 1940: 383).  
*Anilara australis* Théry, 1911: 27 (Carter, 1940: 383).



**NOTOGRAPHUS** Thomson

*Notographus* Thomson, 1879a: 26.  
*Notograptus* Macleay, 1872: 243 (preocc.).

**Notographus uniformis** (Macleay) (Map 62)

*Anthaxia uniformis* Macleay, 1888: 1229.  
*Notographus uniformis* (Macleay) (Carter, 1926: 51).  
*Notographus thomsoni* Obenberger, 1922a: 73 (Carter, 1940: 384).  
*Notographus uniformis* (Macleay) (Carter, 1940: 384).

**CURIS** Gory and Laporte

*Curis* Gory and Laporte, 1838: 47.  
*Selagis* Dejean, 1834: 93.  
*Neocuroopsis* Obenberger, 1923a: 22.

**Curis aurifera** Gory and Laporte (Map 63)

*Curis aurifera* Gory and Laporte, 1838: 49 (replacement name).  
*Selagis caloptera* Dejean, 1837: 89 (preocc.).  
*Curis aurovittata* Boheman, 1858: 60.

**Curis caloptera** (Boisduval) (Map 64)

*Buprestis caloptera* Boisduval, 1835: 93.  
*Curis caloptera* (Boisduval) (Saunders, 1868b: 21).  
*Curis formosa* Gestro, 1877: 431.  
*Curis confusa* Obenberger, 1923b: 72.  
*Curis confusa* var. *clara* Obenberger, 1923b: 73 (Obenberger, 1930: 567).

**Curis corusca** Waterhouse (Map 65)

*Curis corusca* Waterhouse, 1882: 51.  
*Curis carusca* Carter, 1929: 289 (misspelling).  
*Curis corrusca* auctorum.

**Curis viridicyanea** Fairmaire (Map 66)

*Curis viridicyanea* Fairmaire, 1877a: 332.

**NEOCURIS** Fairmaire

*Neocuris* Fairmaire, 1877b: 334.

**Neocuris anthaxioides** Fairmaire (Map 67)

*Neocuris anthaxioides* Fairmaire, 1877b: 336.  
*Neocuris livida* Carter, 1924b: 532.

**Neocuris asperipennis** Fairmaire (Map 68)

*Neocuris asperipennis* Fairmaire, 1877b: 339.

**Neocuris coerulans** Fairmaire (Map 69)

*Neocuris coerulans* Fairmaire, 1877b: 335.  
*Neocuris pilosula* Obenberger, 1923b: 73 (Carter, 1940: 384).  
*Neocuris pilosula* var. *similis* Obenberger, 1923b: 73 (Obenberger, 1930: 564).

**Neocuris cuprilatera** Fairmaire (Map 70)

*Neocuris cuprilatera* Fairmaire, 1877b: 336.  
*Neocuris indigacea* Obenberger, 1923b: 75 (Carter, 1940: 384).

**Neocuris dichroa** Fairmaire (Map 71)

*Neocuris dichroa* Fairmaire, 1877b: 335.

**Neocuris discoflava** Fairmaire (Map 72)

*Neocuris discoflava* Fairmaire, 1877b: 339.

**Neocuris doddi** Carter (Map 73)

*Neocuris doddi* Carter, 1928: 281.

**Neocuris fairmairei** Blackburn (Map 74)

*Neocuris fairmairei* Blackburn, 1887: 249.

**Neocuris fortnumi** (Hope) (Map 75)

*Anthaxia fortnumi* Hope, 1846: 216.  
*Neocuris fortnumi* (Hope) (Saunders, 1868b: 19).

**Neocuris gracilis** Macleay (Map 76)

*Neocuris gracilis* Macleay, 1872: 241.  
*Neocuris soror* Fairmaire, 1877b: 337.  
*Neocuris atra* Obenberger, 1923b: 74.  
*Neocuris ignota* Obenberger, 1923b: 74.  
*Neocuris oblongula* Obenberger, 1923b: 75.  
*Neocuris lepida* Obenberger, 1923b: 75.  
*Neocuris oblongata* Carter, 1928: 279 (lapsus).

**Neocuris guerinii** (Hope) (Map 77)

*Stigmodera guerinii* Hope, 1845: 103.  
*Neocuris guerinii* (Hope) (Saunders, 1868b: 20).  
*Neocuris guerini* var. *subtilis* Obenberger, 1923b: 76 (Obenberger, 1930: 563).

*Neocuris guerini* auctorum.

**Neocuris monochroma** Fairmaire (Map 78)

*Neocuris monochroma* Fairmaire, 1877b: 334.

**Neocuris pauperata** Fairmaire (Map 79)

*Neocuris pauperata* Fairmaire, 1877b: 337.

**Neocuris pubescens** Blackburn (Map 80)

*Neocuris pubescens* Blackburn, 1887: 250.

**Neocuris viridimicans** Fairmaire (Map 81)

*Neocuris viridimicans* Fairmaire, 1877b: 335.  
*Neocuris sapphira* Carter, 1924b: 532.

**Tribe STIGMODERINI** Lacordaire

Stigmoderini Lacordaire, 1857: 33.  
 Stigmoderae Carter and Théry, 1929: 271.

**STIGMODERA** Eschscholtz

*Stigmodera* Eschscholtz, 1829: 9.  
*Polychroma* Dejean, 1836: 89.

**Stigmodera jackquinotii** (Boisduval) (Map 82)

*Buprestis jackquinotii* Boisduval, 1835: 67.  
*Stigmodera jacquinoti* (Boisduval) (Gory and Laporte, 1837: 9).

*Stigmodera jacquinoti* auctorum.

**Stigmodera macularia** (Donovan) (Map 83)

*Buprestis macularia* Donovan, 1805: 8, f. 2.  
*Stigmodera macularia* (Donovan) (Gory and Laporte, 1837: 8).

*Buprestis cicatricosa* Dalman, 1823: 53.

**Stigmodera sanguinosa** Hope (Map 84)

*Stigmodera sanguinosa* Hope, 1846: 210.

**THEMOGNATHA** Solier

*Themognatha* Solier, 1833: 291 (to genus: Gardner, 1990: 338)

**Themognatha aestimata** (Kerremans)

*Stigmodera aestimata* Kerremans, 1898: 135.

**Themognatha barbiventris** (Carter) (Map 85)

*Stigmodera barbiventris* Carter, 1916: 113.

**Themognatha congener** (Saunders) (Map 86)

*Stigmodera congener* Saunders, 1869: 1.

**Themognatha conspicillata** (White)

*Stigmodera conspicillata* White, 1843a: 344.

*Stigmodera signaticollis* Hope, 1846: 209.

*Stigmodera cyanura* Hope, 1846: 211.

**Themognatha duboulayi** (Saunders) (Map 87)

*Stigmodera duboulayi* Saunders, 1872: 253.

**Themognatha flavicollis** (Saunders) (Map 88)

*Stigmodera flavicollis* Saunders, 1869: 3.

*Stigmodera unicincta* Saunders, 1872: 252.

**Themognatha flavocincta** (Gory and Laporte) (Map 89)

*Stigmodera flavo-cincta* Gory and Laporte, 1837: 6.

**Themognatha flavomarginata** (Gemminger and Harold) (Map 90)

*Stigmodera flavomarginata* Gemminger and Harold, 1869: 1400 (replacement name).

*Stigmodera cruentata* Murray, 1852: 253 (preocc.).

**Themognatha fortnumi** (Hope) (Map 91)

*Stigmodera fortnumi* Hope, 1845: 102.

**Themognatha heros** (Gehin) (Map 92)

*Themognatha heros* Gehin, 1855: 57.

**Themognatha maculiventris** (Macleay) (Map 93)

*Stigmodera maculiventris* Macleay, 1863: 32.

**Themognatha menalcas** (Thomson) (Map 94)

*Themognatha menalcas* Thomson, 1879b: 14.

**Themognatha mitchellii** (Hope) (Map 95)

*Stigmodera mitchellii* Hope, 1846: 209.



- Stigmodera stricklandi* Hope, 1846: 220.  
*Stigmodera daphnis* Thomson, 1857: 112.  
*Stigmodera quadripilota* Saunders, 1869: 5.  
*Themognatha ostentatrix* Thomson, 1879c: 93.  
*Stigmodera tasmanica* Kerremans, 1890a: 42.  
*Stigmodera karatae* Blackburn, 1890b: 149.  
*Themognatha mitchelli* auctorum.
- Themognatha parryi** (Hope) (Map 96)  
*Stigmodera parryi* Hope, 1846: 210.  
*Stigmodera parvicollis* Saunders, 1869: 1.  
*Stigmodera fusca* Saunders, 1871: 66.  
*Stigmodera picea* Kerremans, 1890a: 40.  
*Stigmodera (Themognatha) queenslandica* Obenberger, 1922b: 112 (misspelling).
- Themognatha pascoei** (Saunders)  
*Stigmodera pascoei* Saunders, 1868a: 463.
- Themognatha praecellens** (Kerremans) (Map 97)  
*Stigmodera praecellens* Kerremans, 1890b: 140.  
*Stigmodera frenchi* Blackburn, 1890b: 150.
- Themognatha pubicollis** (Waterhouse) (Map 98)  
*Stigmodera pubicollis* Waterhouse, 1874: 539.  
*Stigmodera pubicollis* var. *major* Waterhouse, 1874: 539.  
*Stigmodera lateritia* Thomson, 1879a: 30.
- Themognatha sanguinea** (Saunders)  
*Stigmodera sanguinea* Saunders, 1869: 4.  
*Stigmodera avuncularis* Thomson, 1879a: 30.  
*Stigmodera pictiventris* Kerremans, 1900: 314.
- Themognatha sanguinipennis** (Gory and Laporte) (Map 99)  
*Stigmodera sanguinipennis* Gory and Laporte, 1837: 16.  
*Stigmodera cincticollis* Kerremans, 1898: 134.
- Themognatha sanguiniventris** (Saunders) (Map 100)  
*Stigmodera sanguiniventris* Saunders, 1868a: 465.
- Themognatha suturalis** (Donovan) (Map 101)  
*Buprestis suturalis* Donovan, 1805, pl. 8, fig. 5.  
*Buprestis vertebralis* Boisduval, 1835: 66.  
*Stigmodera (Themognatha) suturalis* var. *tincticollis* Obenberger, 1922b: 112 (misspelling) (Obenberger, 1934: 747).
- Themognatha tricolorata** (Waterhouse) (Map 102)  
*Stigmodera tricolorata* Waterhouse, 1874: 545.
- Themognatha variabilis** (Donovan) (Map 103)  
*Buprestis variabilis* Donovan, 1805, pl. 7, fig. 1.  
*Buprestis kingii* Macleay, 1827: 441.  
*Stigmodera nigripennis* Gory and Laporte, 1837: 15.  
*Stigmodera unifasciata* Gory and Laporte, 1837: 20.  
*Stigmodera (Themognatha) cyaniventris* Kerremans, 1900: 315.  
*Stigmodera (Themognatha) quinquefossulata* Théry, 1911: 54.
- Themognatha vitticollis** (Macleay) (Map 104)  
*Stigmodera vitticollis* Macleay, 1863: 30.  
*Themognatha delia* Thomson, 1879d: 124.  
*Stigmodera fallaciosa* Kerremans, 1890a: 41.
- Themognatha yarelli** (Gory and Laporte) (Map 105)  
*Stigmodera yarelli* Gory and Laporte, 1837: 14.  
*Themognatha flavipennis* Gehin., 1855: 61.  
*Themognatha elegans* Gehin., 1855: 62.  
*Stigmodera varicollis* Carter, 1913: 49.  
*Stigmodera yarelli* var. *coeruleus* Carter, 1932: 124.  
*Themognatha yarelli* auctorum.
- CASTIARINA** Gory and Laporte  
*Castiarina* Gory and Laporte, 1837: 4 (to genus: Gardner, 1990: 340).
- Castiarina abdominalis** (Saunders) (Map 106)  
*Stigmodera abdominalis* Saunders, 1868a: 467.
- Castiarina adelaidae** (Hope) (Map 107)  
*Stigmodera adelaidae* Hope, 1846: 212.
- Castiarina aeneicornis** (Saunders) (Map 108)  
*Stigmodera aeneicornis* Saunders, 1868a: 472.  
*Stigmodera laudabilis* Kerremans, 1898: 146 (Barker, 1986: 28).
- Castiarina affabilis** (Kerremans) (Map 109)  
*Stigmodera affabilis* Kerremans, 1898: 141.  
*Stigmodera (Castiarina) simplex* Kerremans, 1903a: 210 (Barker, 1986: 28).
- Castiarina amplipennis** (Saunders) (Map 110)  
*Stigmodera amplipennis* Saunders, 1868a: 480.  
*Stigmodera amplicollis* Carter, 1931a: 107 (lapsus).
- Castiarina andersoni** (Gory and Laporte) (Map 111)  
*Stigmodera andersoni* Gory and Laporte, 1837: 25.  
*Stigmodera verax* Kerremans, 1898: 146 (Barker, 1986: 28).  
*Stigmodera (Castiarina) dicax* Obenberger, 1922b: 119 (Barker, 1986: 28).
- Castiarina argillacea** (Carter) (Map 112)  
*Stigmodera (Castiarina) argillacea* Carter, 1916: 126.
- Castiarina arida** (Barker)  
*Stigmodera (Castiarina) arida* Barker, 1987: 135.
- Castiarina attenuata** (Carter) (Map 113)  
*Stigmodera (Castiarina) attenuata* Carter, 1916: 132.
- Castiarina aurantiaca** (Carter) (Map 114)  
*Stigmodera (Castiarina) aurantiaca* Carter, 1931b: 346.
- Castiarina australasiae** (Gory and Laporte) (Map 115)  
*Stigmodera australasiae* Gory and Laporte, 1837: 32.  
*Stigmodera assimilis* Hope, 1846: 212 (Barker, 1986: 28).  
*Stigmodera melbournensis* Thomson, 1879a: 34 (Barker, 1986: 28).  
*Stigmodera timida* Kerremans, 1898: 147 (Barker, 1986: 28).
- Castiarina bella** (Saunders) (Map 116)  
*Stigmodera bella* Saunders, 1871: 71 (replacement name).  
*Stigmodera cruentata* Gory and Laporte, 1837: 29 (preocc.).  
*Stigmodera bella* var. *dixonii* Carter, 1926: 57 (Barker, 1986: 28).
- Castiarina bifasciata** (Hope) (Map 117)  
*Buprestis bifasciata* Hope, 1831: 25.  
*Buprestis bicincta* Boisduval, 1835: 89 (Barker, 1986: 28).  
*Stigmodera bicingulata* Gory and Laporte, 1837: 30 (Barker, 1986: 28).  
*Stigmodera dejeani* Gory, 1841, err. add (Barker, 1986: 28).  
*Stigmodera bicincta* Gory, 1841: 131 (Barker, 1986: 28).  
*Stigmodera trispinosa* Kerremans, 1890a: 43 (Barker, 1986: 28).  
*Stigmodera (Castiarina) bicincta* var. *bina* Obenberger, 1922b: 115 (Barker, 1986: 28).
- Castiarina bremeri** (Hope) (Map 118)  
*Conognatha bremeri* Hope, 1845: 102.
- Castiarina brutella** (Thomson) (Map 119)  
*Stigmodera brutella* Thomson, 1879a: 37.  
*Stigmodera graphisura* Thomson, 1879a: 37 (Barker, 1986: 28).  
*Stigmodera uniformis* Kerremans, 1898: 145 (Barker, 1986: 28).  
*Stigmodera (Castiarina) brutella* spp. *victrix* Obenberger, 1922b: 119 (Barker, 1986: 28).
- Castiarina burnsi** (Barker) (Map 120)  
*Stigmodera (Castiarina) burnsi* Barker, 1986: 26.
- Castiarina caillaina** (Barker) (Map 121)  
*Stigmodera (Castiarina) caillaina* Barker, 1987: 139.
- Castiarina callubriensis** (Carter) (Map 122)  
*Stigmodera callubriensis* Carter, 1931b: 386.
- Castiarina carminea** (Saunders) (Map 123)  
*Stigmodera carminea* Saunders, 1868a: 474.  
*Stigmodera felix* Kerremans, 1898: 142 (Barker, 1986: 29).
- Castiarina castelnaudi** (Saunders) (Map 124)  
*Stigmodera castelnaudi* Saunders, 1869: 9.  
*Stigmodera castelnaudii* Thomson, 1878: 53.  
*Stigmodera thomsoniana* Masters, 1886: 97 (Barker, 1986: 29).  
*Stigmodera laportei* Kerremans, 1890a: 42 (Barker, 1986: 29).  
*Stigmodera (Castiarina) castelnaudi* var. *naias* Obenberger, 1933: 104 (Barker, 1986: 29).
- Castiarina coeruleipes** (Saunders) (Map 125)  
*Stigmodera coeruleipes* Saunders, 1869: 13.



- Stigmodera* (*Castiarina*) *coeruleipes* var. *montana* Carter, 1916: 106 (Barker, 1986: 29).
- Castiarina colorata** (Hope) (Map 126)  
*Stigmodera colorata* Hope, 1847: 283.
- Castiarina commixta** (Carter)  
*Stigmodera commixta* Carter, 1924a: 21.
- Castiarina costata** (Saunders) (Map 127)  
*Stigmodera costata* Saunders, 1868a: 470.
- Castiarina crenata** (Donovan) (Map 128)  
*Buprestis crenata* Donovan, 1805, pl. 7, fig. 3.  
*Buprestis amphichroa* Boisduval, 1835: 90 (Barker, 1986: 29).  
*Stigmodera sexspilota* Gory and Laporte, 1837: 35 (Barker, 1986: 29).
- Stigmodera* (*Castiarina*) *amphichroa* var. *allecto* Obenberger, 1933: 105 (Barker, 1986: 29).
- Stigmodera* (*Castiarina*) *amphichroa* var. *euterpe* Obenberger, 1933: 105 (Barker, 1986: 29).
- Castiarina cruentata** (Kirby) (Map 129)  
*Buprestis cruentata* Kirby, 1818b: 455.  
*Stigmodera neologa* Thomson, 1879a: 35 (Barker, 1986: 29).  
*Stigmodera stillata* Blackburn, 1890b: 148 (Barker, 1986: 29).  
*Stigmodera coelestis* Kerremans, 1890a: 48 (Barker, 1986: 29).  
*Stigmodera coerulea* Kerremans, 1892: 146 (Barker, 1986: 29).
- Castiarina crux** (Saunders) (Map 130)  
*Stigmodera crux* Saunders, 1868a: 473.
- Castiarina cupreoflava** (Saunders) (Map 131)  
*Stigmodera cupreoflava* Saunders, 1869: 10.  
*Stigmodera* (*Castiarina*) *magnetica* Carter, 1933: 161 (Barker, 1986: 29).
- Castiarina cyanipes** (Saunders) (Map 132)  
*Stigmodera cyanipes* Saunders, 1868a: 468.  
*Stigmodera* (*Castiarina*) *cyanipes* var. *lalage* Obenberger, 1933: 75 (Barker, 1986: 29).
- Castiarina decemmaculata** (Kirby) (Map 133)  
*Buprestis decemmaculata* Kirby, 1818b: 456.  
*Stigmodera* (*Castiarina*) *inaequalis* Kerremans, 1903a: 207 (Barker, 1986: 29).  
*Stigmodera* (*Castiarina*) *decemmaculata* var. *bellula* Obenberger, 1933: 71 (Barker, 1986: 29).
- Castiarina delectabilis** (Hope) (Map 134)  
*Stigmodera delectabilis* Hope, 1847: 284.  
*Stigmodera* (*Castiarina*) *delectabilis* var. *cyaneiventris* Obenberger, 1933: 106 (Barker, 1986: 29).  
*Stigmodera* (*Castiarina*) *delectabilis* var. *carneola* Obenberger, 1933: 106 (Barker, 1986: 29).
- Castiarina deyrollei** (Thomson) (Map 135)  
*Stigmodera deyrollei* Thomson, 1879d: 125.  
*Stigmodera chobauti* Théry, 1895: 328 (Barker, 1986: 30).  
*Stigmodera sancta* Carter, 1913: 501 (Barker, 1986: 30).
- Castiarina dimidiata** (Carter) (Map 136)  
*Stigmodera dimidiata* Carter, 1908: 422.  
*Stigmodera* (*Castiarina*) *dorsalis* Obenberger, 1922b: 118 (Barker, 1986: 30).  
*Stigmodera* (*Castiarina*) *leai* var. *fasciosa* Obenberger, 1922b: 122 (Barker, 1986: 30).
- Castiarina distinguenda** (Saunders) (Map 137)  
*Stigmodera distinguenda* Saunders, 1869: 9.  
*Stigmodera distinguenda* ssp. *differeus* Carter, 1931b: 364 (Barker, 1986: 30).
- Castiarina dugganensis** (Barker) (Map 138)  
*Stigmodera* (*Castiarina*) *dugganensis* Barker, 1987: 136.
- Castiarina erasma** (Carter) (Map 139)  
*Stigmodera erasma* Carter, 1935: 180.
- Castiarina erythromelas** (Boisduval) (Map 140)  
*Buprestis erythromelas* Boisduval, 1835: 75.  
*Stigmodera longula* Blackburn, 1892c: 54 (Barker, 1986: 30).
- Stigmodera* (*Castiarina*) *cicerini* Obenberger, 1928: 331 (Barker, 1986: 30).
- Castiarina erythroptera** (Boisduval) (Map 141)  
*Buprestis erythroptera* Boisduval, 1835: 88.  
*Stigmodera canaliculata* Blackburn, 1892c: 51 (Barker, 1986: 30).  
*Stigmodera* (*Castiarina*) *erythroptera* ssp. *nigroterminata* Carter, 1934: 257 (Barker, 1986: 30).
- Castiarina flava** (Saunders) (Map 142)  
*Stigmodera flava* Saunders, 1869: 17.  
*Stigmodera flavescens* Masters, 1886: 86 (Barker, 1986: 30).  
*Stigmodera flava*- Thomson, 1878: 55.  
*Stigmodera flavidula* Kerremans, 1890a: 47 (Barker, 1986: 30).
- Stigmodera* (*Castiarina*) *flava* var. *notulata* Obenberger, 1922b: 115 (Barker, 1986: 30).
- Castiarina flavopicta** (Boisduval) (Map 143)  
*Buprestis flavopicta* Boisduval, 1835: 92.  
*Stigmodera flavopicta*- Gory and Laporte, 1837: 44.  
*Stigmodera flavovaria* Saunders, 1871: 74 (Barker, 1986: 30).  
*Stigmodera* (*Castiarina*) *flavopicta* var. *nausicaa* Obenberger, 1933: 110 (Barker, 1986: 30).  
*Stigmodera* (*Castiarina*) *avopicta* var. *erato* Obenberger, 1933: 110 (Barker, 1986: 30).  
*Stigmodera* (*Castiarina*) *flavopicta* var. *palaeno* Obenberger, 1933: 111 (Barker, 1986: 30).  
*Stigmodera* (*Castiarina*) *flavopicta* var. *iris* Obenberger, 1933: 111 (Barker, 1986: 30).  
*Stigmodera* (*Castiarina*) *flavopicta* var. *phaedusa* Obenberger, 1933: 111 (Barker, 1986: 30).  
*Stigmodera* (*Castiarina*) *flavopicta* var. *antiope* Obenberger, 1933: 112 (Barker, 1986: 30).  
*Stigmodera* (*Castiarina*) *flavopicta* var. *callidice* Obenberger, 1933: 112 (Barker, 1986: 30).
- Castiarina flavopurpurea** (Carter) (Map 144)  
*Stigmodera flavopurpurea* Carter, 1908: 421.
- Castiarina flavosignata** (Macleay) (Map 145)  
*Stigmodera flavosignata* Macleay, 1863: 30.  
*Stigmodera* (*Castiarina*) *circumflexa* Obenberger, 1922b: 121 (Barker, 1986: 30).  
*Stigmodera* (*Castiarina*) *flavosignata* var. *rufosignata* Carter, 1931b: 349 (Barker, 1986: 30).
- Castiarina fossoria** (Carter) (Map 146)  
*Stigmodera* (*Castiarina*) *fossoria* Carter, 1927: 226.
- Castiarina fulviventris** (Macleay) (Map 147)  
*Stigmodera fulviventris* Macleay, 1863: 22.  
*Stigmodera guttigera* Blackburn, 1901, p. 24 (Barker, 1986: 30).  
*Stigmodera* (*Castiarina*) *mackayana* Carter, 1930b: 536 (Barker, 1986: 30).
- Castiarina gardnerae** (Barker) (Map 148)  
*Stigmodera* (*Castiarina*) *gardnerae* Barker, 1987: 144.
- Castiarina gibbicollis** (Saunders) (Map 149)  
*Stigmodera gibbicollis* Saunders, 1868a: 470.  
*Stigmodera fascigera* Kerremans, 1890a: 42 (Barker, 1986: 30).
- Castiarina gordonburnsi** (Barker) (Map 150)  
*Stigmodera* (*Castiarina*) *gordonburnsi* Barker, 1987: 138.
- Castiarina goudiana** (Barker) (Map 151)  
*Stigmodera* (*Castiarina*) *goudiana* Barker, 1987: 139.
- Castiarina hateleyi** (Barker) (Map 152)  
*Stigmodera* (*Castiarina*) *hateleyi* Barker, 1980: 4.
- Castiarina helmsi** (Carter) (Map 153)  
*Stigmodera helmsi* Carter, 1906: 259.
- Castiarina hilaris** (Hope) (Map 154)  
*Stigmodera hilaris* Hope, 1846: 213.  
*Stigmodera* (*Castiarina*) *hilaris* var. *infasciata* Carter, 1933: 163 (Barker, 1986: 31).
- Castiarina hoffmanseggii** (Hope) (Map 155)  
*Stigmodera hoffmanseggii* Hope, 1846: 211.  
*Stigmodera fairmairei* Kerremans, 1898: 140 (Barker, 1986: 31).



- Castiarina hoffmanseggii* auctorum.  
*Castiarina ignea* (Blackburn) (Map 156)  
*Stigmodera ignea* Blackburn, 1892d: 219.  
*Stigmodera unica* Kerremans, 1898: 150 (Barker, 1986: 31).  
*Castiarina ignota* (Saunders) (Map 157)  
*Stigmodera ignota* Saunders, 1869: 12.  
*Castiarina imitator* (Carter) (Map 158)  
*Stigmodera (Castiarina) imitator* Carter, 1930a: 180.  
*Castiarina inconspicua* (Saunders) (Map 159)  
*Stigmodera inconspicua* Saunders, 1868a: 476.  
*Stigmodera electa* Kerremans, 1898: 154 (Barker, 1986: 31).  
*Castiarina indistincta* (Saunders) (Map 160)  
*Stigmodera indistincta* Saunders, 1869: 11.  
*Stigmodera (Castiarina) indistincta* var. *anchorifera* Obenberger, 1933: 76 (Barker, 1986: 31).  
*Stigmodera (Castiarina) indistincta* var. *electa* Obenberger, 1933: 76 (Barker, 1986: 31).  
*Stigmodera (Castiarina) indistincta* var. *acclivis* Obenberger, 1933: 76 (Barker, 1986: 31).  
*Stigmodera (Castiarina) indistincta* var. *extrema* Obenberger, 1933: 76 (Barker, 1986: 31).  
*Castiarina insignis* (Blackburn) (Map 161)  
*Stigmodera insignis* Blackburn, 1892d: 217.  
*Stigmodera caudata* Kerremans, 1900: 316 (preocc.).  
*Castiarina insularis* (Blackburn) (Map 162)  
*Stigmodera insularis* Blackburn, 1897: 30.  
*Stigmodera cognata* Kerremans, 1898: 136 (Barker, 1986: 31).  
*Castiarina interstitialis* (Carter) (Map 163)  
*Stigmodera (Castiarina) interstitialis* Carter, 1931b: 345.  
*Castiarina jeanae* (Barker) (Map 164)  
*Stigmodera (Castiarina) jeanae* Barker, 1983: 164.  
*Castiarina jekellii* (Saunders) (Map 165)  
*Stigmodera jekellii* Saunders, 1868a: 467.  
*Castiarina jekelli* auctorum.  
*Castiarina jospilota* (Gory and Laporte) (Map 166)  
*Stigmodera jospilota* Gory and Laporte, 1837: 35.  
*Stigmodera (Castiarina) lacerta* Obenberger, 1933: 109 (Barker, 1986: 31).  
*Castiarina kerremansi* (Blackburn) (Map 167)  
*Stigmodera kerremansi* Blackburn, 1890b: 147.  
*Stigmodera apicalis* Kerremans, 1890a: 45 (Barker, 1986: 31).  
*Castiarina kershawi* (Carter) (Map 168)  
*Stigmodera (Castiarina) kershawi* Carter, 1924b: 522.  
*Stigmodera (Castiarina) kershawi* var. *carterella* Obenberger, 1933: 104 (Barker, 1986: 31).  
*Castiarina kiatae* (Barker) (Map 169)  
*Stigmodera (Castiarina) kiatae* Barker, 1980: 6.  
*Castiarina kirbyi* (Guerin) (Map 170)  
*Buprestis kirbyi* Guerin, 1830: 65.  
*Stigmodera tacita* Kerremans, 1898: 153 (Barker, 1986: 31).  
*Stigmodera (Castiarina) kirbyi* var. *adonis* Obenberger, 1922b: 118 (Barker, 1986: 31).  
*Stigmodera (Castiarina) kirbyi* var. *peregrina* Obenberger, 1922b: 118 (Barker, 1986: 31).  
*Castiarina klugii* (Gory and Laporte) (Map 171)  
*Stigmodera klugii* Gory and Laporte, 1837: 27.  
*Stigmodera (Castiarina) klugi* var. *nixa* Obenberger, 1933: 75 (Barker, 1986: 31).  
*Castiarina klugi* auctorum.  
*Castiarina leai* (Carter) (Map 172)  
*Stigmodera leai* Carter, 1916: 136.  
*Castiarina livida* (Barker) (Map 173)  
*Stigmodera (Castiarina) livida* Barker, 1987: 140.  
*Castiarina malleeana* (Carter) (Map 174)  
*Castiarina malleeana* Carter, 1931b: 340.  
*Castiarina marginata* (Barker) (Map 175)  
*Stigmodera (Castiarina) marginata* Barker, 1983: 151.  
*Castiarina marginicollis* (Saunders) (Map 176)  
*Stigmodera marginicollis* Saunders, 1868a: 469.  
*Stigmodera (Castiarina) bifasciatella* Obenberger, 1922b: 115 (Barker, 1986: 32).  
*Castiarina media* (Hope) (Map 177)  
*Stigmodera media* Hope, 1847: 284.  
*Stigmodera septemmaculata* Blackburn, 1892c: 45 (Barker, 1986: 32).  
*Stigmodera (Castiarina) septemnotata* Carter, 1916: 86 (Barker, 1986: 32).  
*Castiarina militaris* (Carter) (Map 178)  
*Stigmodera militaris* Carter, 1922: 71.  
*Castiarina montigena* (Oke) (Map 179)  
*Stigmodera montigena* Oke, 1928: 25.  
*Stigmodera (Castiarina) alpestris* Barker, 1983: 146 (Barker, 1986: 32).  
*Castiarina nasuta* (Saunders) (Map 180)  
*Stigmodera nasuta* Saunders, 1869: 15.  
*Stigmodera (Castiarina) fossithorax* Obenberger, 1928: 329 (Barker, 1986: 32).  
*Castiarina oblita* (Carter) (Map 181)  
*Stigmodera (Castiarina) oblita* Carter, 1931b: 347.  
*Castiarina obscura* (Saunders) (Map 182)  
*Stigmodera obscura* Saunders, 1869: 26.  
*Stigmodera (Castiarina) obscura* var. *posticedivisa* Obenberger, 1933: 106 (Barker, 1986: 32).  
*Stigmodera (Castiarina) obscura* var. *anticedivisa* Obenberger, 1933: 106 (Barker, 1986: 32).  
*Castiarina ochreiventris* (Saunders) (Map 183)  
*Stigmodera ochreiventris* Saunders, 1869: 8.  
*Stigmodera cara* Blackburn, 1892d: 216 (Barker, 1986: 32).  
*Castiarina octomaculata* (Saunders) (Map 184)  
*Stigmodera octomaculata* Saunders, 1868a: 472.  
*Castiarina octospilota* (Gory and Laporte) (Map 185)  
*Stigmodera octospilota* Gory and Laporte, 1837: 28.  
*Stigmodera femorata* Gory and Laporte, 1837: 37 (Barker, 1986: 32).  
*Stigmodera octospilota* var. *roseipes* Deuquet, 1956: 154 (Barker, 1986: 32).  
*Castiarina ornata* (Blackburn) (Map 186)  
*Stigmodera ornata* Blackburn, 1892c: 53.  
*Castiarina ovata* (Barker) (Map 187)  
*Stigmodera (Castiarina) ovata* Barker, 1979: 10.  
*Castiarina pallidipennis* (Blackburn) (Map 188)  
*Stigmodera pallidipennis* Blackburn, 1890b: 154.  
*Castiarina pallidiventris* (Gory and Laporte) (Map 189)  
*Stigmodera pallidiventris* Gory and Laporte, 1837: 42.  
*Stigmodera rustica* Kerremans, 1898: 154 (Barker, 1986: 32).  
*Castiarina parallela* (White) (Map 190)  
*Stigmodera parallela* White, 1859b: 119.  
*Stigmodera elongatula* Macleay, 1872: 246 (Barker, 1986: 32).  
*Castiarina parallelipennis* (Obenberger) (Map 191)  
*Stigmodera parallelipennis* Obenberger, 1934: 725 (replacement name).  
*Stigmodera parallela* Saunders, 1869: 16 (preocc.).  
*Castiarina perlonga* (Carter) (Map 192)  
*Stigmodera (Castiarina) perlonga* Carter, 1931b: 343.  
*Castiarina piliventris* (Saunders) (Map 193)  
*Stigmodera piliventris* Saunders, 1868a: 474.  
*Stigmodera generosa* Kerremans, 1898: 150 (Barker, 1986: 33).  
*Castiarina placida* (Thomson) (Map 194)  
*Stigmodera placida* Thomson, 1879a: 33.  
*Castiarina praetermissa* (Carter) (Map 195)  
*Stigmodera praetermissa* Carter, 1921: 306.  
*Castiarina producta* (Saunders) (Map 196)  
*Stigmodera producta* Saunders, 1868a: 482.  
*Stigmodera acutipennis* Thomson, 1879a: 38 (Barker, 1986: 33).  
*Stigmodera (Castiarina) sulcicollis* Kerremans, 1903a: 209 (Barker, 1986: 33).  
*Stigmodera (Castiarina) producta* var. *polymele* Obenberger, 1933: 112 (Barker, 1986: 33).



- Castiarina pulchripes** (Blackburn) (Map 197)  
*Stigmodera pulchripes* Blackburn, 1897: 31.
- Castiarina punctatosulcata** (Saunders) (Map 198)  
*Stigmodera punctatosulcata* Saunders, 1869: 24.  
*Stigmodera litigiosa* Kerremans, 1890a: 45 (Barker, 1986: 33).
- Castiarina punctiventris** (Saunders) (Map 199)  
*Stigmodera punctiventris* Saunders, 1869: 17.  
*Stigmodera* (*Castiarina*) *pisciformis* Carter, 1916: 125 (Barker, 1986: 33).
- Castiarina recta** (Saunders) (Map 200)  
*Stigmodera recta* Saunders, 1869: 23.
- Castiarina rectifasciata** (Saunders) (Map 201)  
*Stigmodera rectifasciata* Saunders, 1868a: 472.  
*Stigmodera vigilans* Kerremans, 1898: 143 (Barker, 1986: 33).
- Castiarina robusta** (Saunders) (Map 202)  
*Stigmodera robusta* Saunders, 1869: 6.  
*Stigmodera* (*Castiarina*) *robusta* var. *castula* Obenberger, 1933: 75 (Barker, 1986: 33).  
*Stigmodera* (*Castiarina*) *robusta* var. *unifasciatella* Obenberger, 1933: 75 (Barker, 1986: 33).  
*Stigmodera* (*Castiarina*) *robusta* var. *tristigmata* Obenberger, 1933: 75 (Barker, 1986: 33).
- Castiarina rufa** (Barker) (Map 203)  
*Stigmodera* (*Castiarina*) *rufa* Barker, 1986: 9.
- Castiarina rufipennis** (Kirby) (Map 204)  
*Buprestis rufipennis* Kirby, 1818b: 456.  
*Stigmodera crocipennis* Gory and Laporte, 1837: 21 (Barker, 1986: 33).  
*Stigmodera crocipennis* Hope, 1846: 292 (Barker, 1986: 33) (this reference not checked).  
*Stigmodera* (*Castiarina*) *rufipennis* var. *quadrioveolata* Obenberger, 1933: 69 (Barker, 1986: 33).
- Castiarina scalaris** (Boisduval) (Map 205)  
*Buprestis scalaris* Boisduval, 1835: 89.  
*Buprestis cyanicollis* Boisduval, 1835: 91 (Barker, 1986: 33).  
*Stigmodera crucigera* Gory and Laporte, 1837: 40 (Barker, 1986: 33).  
*Stigmodera viridis* Gory and Laporte, 1837: 46 (Barker, 1986: 33).  
*Calochroa crucigera* Hope, 1838: 162 (Barker, 1986: 33).  
*Stigmodera transversepicta* Thomson, 1879a: 35 (Barker, 1986: 33).  
*Stigmodera macleayi* Blackburn, 1892c: 48 (Barker, 1986: 33).  
*Stigmodera prudens* Kerremans, 1898: 152 (Barker, 1986: 33).  
*Stigmodera* (*Castiarina*) *suavis* Kerremans, 1903a: 210 (Barker, 1986: 33).  
*Stigmodera* (*Castiarina*) *crucioides* Obenberger, 1922b: 118 (Barker, 1986: 33).  
*Stigmodera* (*Castiarina*) *scalaris* var. *acte* Obenberger, 1933: 108 (Barker, 1986: 33).  
*Stigmodera* (*Castiarina*) *scalaris* var. *archianassa* Obenberger, 1933: 108 (Barker, 1986: 33).
- Castiarina scintillata** (Barker) (Map 206)  
*Stigmodera* (*Castiarina*) *scintillata* Barker, 1983: 164.
- Castiarina semicincta** (Gory and Laporte) (Map 207)  
*Stigmodera semicincta* Gory and Laporte, 1837: 19.
- Castiarina semisuturalis** (Saunders) (Map 208)  
*Stigmodera semisuturalis* Saunders, 1868a: 468.  
*Stigmodera speciosa* Kerremans, 1898: 137 (Barker, 1986: 33).
- Castiarina septemguttata** (Waterhouse) (Map 209)  
*Stigmodera septemguttata* Waterhouse, 1874: 540.
- Castiarina sexguttata** (Macleay) (Map 210)  
*Stigmodera sexguttata* Macleay, 1863: 29.  
*Stigmodera* (*Castiarina*) *carteri* Obenberger, 1922b: 123 (Barker, 1986: 34).  
*Stigmodera* (*Castiarina*) *sexguttata* var. *humerigutta* Obenberger, 1922b: 123 (Barker, 1986: 34).
- Castiarina sexplagiata** (Gory) (Map 211)  
*Stigmodera sexplagiata* Gory, 1841: 132 (replacement name).  
*Stigmodera crenata* Gory and Laporte, 1837: 39 (preocc.).  
*Stigmodera plagiata* Gory, 1841, err. add (Barker, 1986: 34).  
*Castiarina hopei* Boheman, 1858: 61 (Barker, 1986: 34).  
*Castiarina similata* Boheman, 1858: 62 (Barker, 1986: 34).  
*Stigmodera krefftii* Macleay, 1872: 245 (Barker, 1986: 34).  
*Stigmodera* (*Castiarina*) *variata* Kerremans, 1903a: 209 (Barker, 1986: 34).
- Castiarina simulata** (Gory and Laporte) (Map 212)  
*Stigmodera simulata* Gory and Laporte, 1837: 26.  
*Stigmodera perplexa* Hope, 1846: 211 (Barker, 1986: 34).  
*Buprestis helenae* Hope, 1846: 215 (Barker, 1986: 34).  
*Buprestis lanuginosa* Hope, 1846: 215 (Barker, 1986: 34).  
*Stigmodera lais* Thomson, 1879a: 33 (Barker, 1986: 34).  
*Stigmodera phryne* Thomson, 1879a: 33 (Barker, 1986: 34).  
*Stigmodera distinguenda* Thomson, 1879a: 34 (Barker, 1986: 34).  
*Stigmodera fraterna* Kerremans, 1890 a: 46 (Barker, 1986: 34).  
*Stigmodera equina* Blackburn, 1892c: 48 (Barker, 1986: 34).  
*Stigmodera* (*Castiarina*) *ravilla* Obenberger, 1922b: 117 (Barker, 1986: 34).  
*Stigmodera* (*Castiarina*) *acutangula* Obenberger, 1928: 333 (Barker, 1986: 34).  
*Stigmodera* (*Castiarina*) *yorkensis* Obenberger, 1928: 335 (Barker, 1986: 34).  
*Stigmodera* (*Castiarina*) *burchelli* var. *dominula* Obenberger, 1933: 76 (Barker, 1986: 34).
- Castiarina skusei** (Blackburn) (Map 213)  
*Stigmodera skusei* Blackburn, 1892c: 46.
- Castiarina spinolae** (Gory) (Map 214)  
*Stigmodera spinolae* Gory, 1841: 129.
- Castiarina straminea** (Macleay) (Map 215)  
*Stigmodera straminea* Macleay, 1863: 25.  
*Stigmodera addenda* Kerremans, 1898: 149 (Barker, 1986: 34).  
*Stigmodera johannae* Théry, 1911: 55 (Barker, 1986: 34).
- Castiarina subpura** (Blackburn) (Map 216)  
*Stigmodera subpura* Blackburn, 1903: 307.
- Castiarina subtinctoria** (Carter) (Map 217)  
*Stigmodera* (*Castiarina*) *subtinctoria* Carter, 1933: 159.
- Castiarina subvicina** (Barker) (Map 218)  
*Stigmodera* (*Castiarina*) *subvicina* Barker, 1983: 163.
- Castiarina supergrata** (Barker) (Map 219)  
*Stigmodera* (*Castiarina*) *supergrata* Barker, 1983: 153.
- Castiarina terminalis** (Kerremans) (Map 220)  
*Stigmodera terminalis* Kerremans, 1890a: 45.
- Castiarina testacea** (Saunders) (Map 221)  
*Stigmodera testacea* Saunders, 1869: 14.
- Castiarina thomsoni** (Saunders) (Map 222)  
*Stigmodera thomsoni* Saunders, 1868a: 477.  
*Stigmodera cordifer* Kerremans, 1890a: 44 (Barker, 1986: 34).  
*Stigmodera colorata* Kerremans, 1898: 141 (Barker, 1986: 34).  
*Stigmodera dulcis* Blackburn, 1900: 41 (Barker, 1986: 34).
- Castiarina triramosa** (Thomson) (Map 223)  
*Stigmodera triramosa* Thomson, 1879a: 32.
- Castiarina uncata** (Barker) (Map 224)  
*Stigmodera* (*Castiarina*) *uncata* Barker, 1986: 11.
- Castiarina undulata** (Donovan) (Map 225)  
*Buprestis undulata* Donovan, 1805, pl. 7, fig. 5.  
*Castiarina laportei* Boheman, 1858: 61 (Barker, 1986: 35).  
*Stigmodera* (*Castiarina*) *opacipennis* Obenberger, 1922b: 116 (Barker, 1986: 35).
- Castiarina variegata** (Barker) (Map 226)  
*Stigmodera* (*Castiarina*) *variegata* Barker, 1983: 162.
- Castiarina variopicta** (Thomson) (Map 227)  
*Stigmodera variopicta* Thomson, 1878: 54.
- Castiarina vegeta** (Hope) (Map 228)  
*Stigmodera vegeta* Hope, 1847: 283.



- Stigmodera coeruleiventris* Saunders, 1869: 20 (Barker, 1986: 35).
- Stigmodera (Castiarina) vegeta* var. *hopeana* Obenberger, 1933: 104 (Barker, 1986: 35).
- Castiarina vicina** (Saunders) (Map 229)  
*Stigmodera vicina* Saunders, 1868b: 43 (replacement name).  
*Stigmodera bicincta* Gory and Laporte, 1837: 31 (preocc.).
- Castiarina victoriensis** (Blackburn) (Map 230)  
*Stigmodera victoriensis* Blackburn, 1890b: 152.  
*Stigmodera sensitiva* Kerremans, 1898: 148 (Barker, 1986: 35).
- Castiarina viridolinea** (Barker) (Map 231)  
*Stigmodera (Castiarina) viridolinea* Barker, 1986: 25.
- Castiarina vittata** (Saunders) (Map 232)  
*Stigmodera vittata* Saunders, 1868a: 478.
- Castiarina wellsae** (Barker) (Map 233)  
*Stigmodera (Castiarina) wellsae* Barker, 1989: 193.
- Castiarina wilsoni** (Saunders) (Map 234)  
*Stigmodera wilsoni* Saunders, 1868a: 476.  
*Stigmodera sigma* Kerremans, 1890a: 43 (Barker, 1986: 35).  
*Stigmodera confinis* Kerremans, 1898: 151 (Barker, 1986: 35).  
*Stigmodera (Castiarina) wilsoni* ssp. *septentrionis* Obenberger, 1922b: 16 (Barker, 1986: 35).
- Castiarina xanthopilosa** (Hope) (Map 235)  
*Stigmodera xanthopilosa* Hope, 1847: 283.  
*Castiarina splendida* Gehin, 1855: 64 (Barker, 1986: 35).  
*Stigmodera (Castiarina) xanthopilosa* var. *subfascigera* Obenberger, 1933: 70 (misspelling).  
*Stigmodera (Castiarina) xanthopilosa* var. *dichroptera* Obenberger, 1933: 70 (misspelling).
- Subfamily **CHRYSOBOTHIRINAE** Gory and Laporte  
 Chrysobothrites Gory and Laporte, 1837: 1.
- Tribe **CHRYSOBOTHIRINI**  
 Chrysobothres Carter and Théry, 1929: 269.
- CHRYSOBOTHIRIS** Eschscholtz  
*Chrysobothris* Eschscholtz, 1829: 9.  
*Amblis* Gistel, 1834: 10.  
*Odontomus* Kirby, 1837: 156.  
*Enocys* Gistel, 1856: 415.
- Chrysobothris mastersii** Macleay (Map 236)  
*Chrysobothris mastersii* Macleay, 1872: 247.  
*Chrysobothris blackburni* Obenberger, 1923b: 77 (Carter, 1940: 384).  
*Chrysobothris mastersi* auctorum.
- Tribe **ACTENODINI** Kerremans  
*Actenodini* Kerremans, 1893: 112.  
*Actenodae* Carter and Théry, 1929: 269.
- MERIMNA** Thomson  
*Merimna* Thomson, 1878: 42.
- Merimna atrata** (Gory and Laporte) (Map 237)  
*Chrysobothris atrata* Gory and Laporte, 1837: 58.  
*Merimna atrata* (Gory and Laporte) (Thomson, 1878: 43).  
*Merimna corporaali* Obenberger, 1924a: 69.
- Subfamily **AGRILINAE** Gory and Laporte  
 Agrilites Gory and Laporte, 1838: 1.  
 Agrili Carter and Théry, 1929: 268.
- Tribe **COROEBINI** Bedel  
 Coroebini Bedel, 1921: 170.
- SYNECHOCERA** Deyrolle  
*Synechocera* Deyrolle, 1864: 115.
- Synechocera tasmanica** Théry (Map 238)  
*Synechocera tasmanica* Théry, 1923: 517.  
*Synechocera longior* Carter, 1928: 274 (Bellamy, 1987: 24).
- PARACEPHALA** Thomson  
*Paracephala* Thomson, 1878: 91.
- Paracephala murina** Thomson (Map 239)  
*Paracephala murina* Thomson, 1878: 91.  
*Paracephala cylindrica* Kerremans, 1898: 177 (Carter, 1940: 388).
- Paracephala pistacina** (Hope) (Map 240)  
*Agrilus pistacinus* Hope, 1846: 218.  
*Paracephala pistacina* (Hope) (Saunders, 1868b: 63).  
*Aphanisticus canaliculatus* Germar, 1848: 180 (Carter, 1940: 388).  
*Paracephala minuta* Kerremans, 1898: 177 (Carter, 1940: 388).
- MELIBOEITHON** Obenberger  
*Meliboeithon* Obenberger, 1920b: 170.
- Meliboeithon intermedium** (Kerremans) (Map 241)  
*Paracephala intermedia* Kerremans, 1898: 177.  
*Meliboeithon intermedium* (Kerremans) (Bellamy, 1988: 434).  
*Meliboeithon fissus* Obenberger, 1920b: 171 (Bellamy, 1988: 434).
- DINOCEPHALIA** Obenberger  
*Dinocephalia* Obenberger, 1923a: 39.  
*Pseudosynechocera* Obenberger, 1943: 33.
- Dinocephalia burnsi** Bellamy (Map 242)  
*Dinocephalia burnsi* Bellamy, 1988: 449.
- Dinocephalia cyaneipennis** (Blackburn) (Map 243)  
*Paracephala cyaneipennis* Blackburn, 1893: 130.  
*Dinocephalia cyaneipennis* (Blackburn) (Bellamy, 1988: 445).
- Dinocephalia thoracica** (Kerremans) (Map 244)  
*Paracephala thoracica* Kerremans, 1900: 343.  
*Dinocephalia thoracica* (Kerremans) (Bellamy, 1988: 442).  
*Dinocephalia gigantea* Obenberger, 1923a: 40 (Bellamy, 1988: 442).
- Dinocephalia transsecta** (Carter) (Map 245)  
*Paracephala transsecta* Carter, 1921: 306.  
*Dinocephalia transsecta* (Carter) (Bellamy, 1988: 446).  
*Paracephala impressicollis* Obenberger, 1924 a: 155. Bellamy, 1988: 447).
- ALCINOUS** Deyrolle  
*Alcinous* Deyrolle, 1864: 115.  
*Cisseis* (part) Gory and Laporte, 1839: 1.
- Alcinous fossicollis** (Kerremans) (Map 246)  
*Cisseis fossicollis* Kerremans, 1903a: 229.  
*Alcinous fossicollis* (Kerremans) (Carter and Théry, 1929: 272, 276).
- Alcinous nodosus** Kerremans (Map 247)  
*Alcinous nodosus* Kerremans, 1898: 175.  
*Alcinous minor* Kerremans, 1898: 176.
- CISSEIS** Gory and Laporte  
*Cisseis* Gory and Laporte, 1839: 1.  
*Diphucrania* (part) Dejean, 1833 (preocc.).  
*Cinyra* auctorum.  
*Coraeus* auctorum.
- Cisseis acuducta** (Kirby) (Map 248)  
*Trachys acuducta* Kirby, 1837: 162.  
*Cisseis acuducta* (Kirby) (Saunders, 1868b: 60).  
*Ethon marmoreum* Gory and Laporte, 1839: 3.  
*Cisseis aenea* Gemminger and Harold, 1869: 1429.  
*Cisseis cuprifrons* Kerremans, 1898: 157.



- Cisseis laeta* Kerremans, 1903a: 227.  
**Cisseis constricta** Blackburn (Map 249)  
*Cisseis constricta* Blackburn, 1887: 254.  
*Cisseis lindi* Blackburn, 1887: 254.  
**Cisseis cupreicollis** (Hope) (Map 250)  
*Ethon cupreicollis* Hope, 1846: 219.  
*Cisseis cupreicollis* (Hope) (Saunders, 1868b: 58).  
*Ethon aeneicollis* Hope, 1846: 220.  
*Cisseis morosa* Kerremans, 1898: 158.  
**Cisseis cupripennis** (Guérin) (Map 251)  
*Buprestis cupripennis* Guérin, 1830: 65.  
*Cisseis cupripennis* (Guérin) (Gory and Laporte, 1839: 5).  
**Cisseis duodecimmaculata** (Fabricius) (Map 252)  
*Buprestis duodecimmaculata* Fabricius, 1801: 191.  
*Cisseis duodecimmaculata* (Fabricius) (Saunders, 1871: 103).  
*Buprestis duodecimguttata* Boisduval, 1835: 93.  
*Cisseis quatuordecimnotata* Hope, 1846: 218.  
*Cisseis xanthosticta* Saunders, 1871: 103.  
*Cisseis pustulata* Thomson, 1879a: 51.  
*Cisseis duodecimmaculata* var. *fallaciosula* Obenberger, 1935a: 36.  
**Cisseis fulgidicollis** Macleay (Map 253)  
*Cisseis fulgidicollis* Macleay, 1888: 1231.  
**Cisseis leucosticta** (Kirby) (Map 254)  
*Buprestis leucosticta* Kirby, 1818a: 382.  
*Cisseis leucosticta* (Kirby) (Saunders, 1868b: 57).  
*Cisseis stellulata* Dalman, 1823: 54.  
*Cisseis stellatula* Kerremans, 1892: 225 (lapsus).  
*Cisseis fulgidifrons* Kerremans, 1898: 161.  
**Cisseis marmorata** Gory and Laporte (Map 255)  
*Cisseis marmorata* Gory and Laporte, 1839: 4.  
*Cisseis similis* Saunders, 1868b: 59.  
*Cisseis viridicollis* Thomson, 1879a: 50.  
*Cisseis aenea* Kerremans, 1898: 158.  
*Cisseis marmorata* var. *prasina* Carter, 1923a: 168.  
**Cisseis minutissima** Thomson (Map 256)  
*Cisseis minutissima* Thomson, 1879a: 54.  
**Cisseis nitidicollis** Kerremans (Map 257)  
*Cisseis nitidicollis* Kerremans, 1898: 162.  
**Cisseis nitidiventris** Carter (Map 258)  
*Cisseis nitidiventris* Carter, 1934: 260.  
**Cisseis notulata** (Germar) (Map 259)  
*Ethon notulatum* Germar, 1848: 178.  
*Cisseis notulata* (Germar) (Saunders, 1871: 103).  
*Cisseis notula* Kerremans, 1892: 226 (Obenberger, 1935b: 850).  
*Cisseis inops* Kerremans, 1898: 168.  
*Cisseis nigrita* Kerremans, 1898: 168.  
*Cisseis semiobscura* Kerremans, 1898: 170.  
*Cisseis violacea* Kerremans, 1903a: 228.  
**Cisseis nubeculosa** (Germar) (Map 260)  
*Ethon nubeculosum* Germar, 1848: 176.  
*Cisseis nubeculosa* (Germar) (Saunders, 1871: 103).  
*Ethon chalcopertum* Germar, 1848: 177.  
**Cisseis parva** Blackburn (Map 261)  
*Cisseis parva* Blackburn, 1887: 253.  
*Cisseis simplex* Kerremans, 1898: 171.  
**Cisseis puella** Kerremans (Map 262)  
*Cisseis puella* Kerremans, 1898: 170.  
*Cisseis curta* Kerremans, 1903a: 229.  
**Cisseis pygmaea** Blackburn (Map 263)  
*Cisseis pygmaea* Blackburn, 1891: 299.  
**Cisseis roseocuprea** (Hope) (Map 264)  
*Ethon roseocupreum* Hope, 1846: 219.  
*Cisseis roseocuprea* (Hope) (Saunders, 1868b: 61).  
*Cisseis impressicollis* Macleay, 1872: 248.  
*Cisseis dispar* Blackburn, 1891: 297.  
*Cisseis fairmairei* Kerremans, 1898: 169.  
*Cisseis cuprea* Kerremans, 1903a: 228.  
**Cisseis rubicunda** Kerremans (Map 265)  
*Cisseis rubicunda* Kerremans, 1898: 169.  
*Cisseis modesta* Kerremans, 1898: 170.  
**Cisseis scabrosula** Kerremans (Map 266)  
*Cisseis scabrosula* Kerremans, 1898: 167.  
**Cisseis subbifascialis** Carter (Map 267)  
*Cisseis subbifascialis* Carter, 1927: 229.  
*Cisseis subbifasciata* Carter, 1929: 279 (lapsus).  
**Cisseis uniformis** Thomson (Map 268)  
*Cisseis uniformis* Thomson, 1879a: 53.  
*Cisseis coraeoides* Kerremans, 1898: 166.  
**Cisseis vicina** Kerremans (Map 269)  
*Cisseis vicina* Kerremans, 1898: 164.  
*Cisseis collaris* Kerremans, 1903a: 229.  
*Cisseis ornata* Kerremans, 1903a: 229.  
**Cisseis viridiceps** Kerremans (Map 270)  
*Cisseis viridiceps* Kerremans, 1898: 168.  
*Cisseis oblonga* Kerremans, 1903a: 229.  
**Cisseis westwoodi** (Gory and Laporte) (Map 271)  
*Coreabus westwoodi* Gory and Laporte, 1839: 15.  
*Cisseis westwoodi* (Gory and Laporte) (Saunders, 1871: 103).  
*Cisseis verna* Blackburn, 1891: 299.  
*Cisseis viridana* Kerremans, 1898: 165.  
*Cisseis theryi* Kerremans, 1903a: 229.
- PACHYCISSEIS** Théry  
*Pachycisseis* Théry, 1929: 268 (to genus: Bellamy, 1988: 417).
- Pachycisseis bicolor** (Gory and Laporte) (Map 272)  
*Ethon bicolor* Gory and Laporte, 1839: 3.
- NEOSPADES** Blackburn  
*Neospades* Blackburn, 1887: 251 (to genus: Bellamy, 1988: 417).
- Neospades chrysopygia** (Germar) (Map 273)  
*Coreabus chrysopygius* Germar, 1848: 178.  
*Cisseis dimidiata* Macleay, 1872: 248.  
*Cisseis semirugosa* Thomson, 1879a: 51.  
*Cisseis semiscabrosa* Thomson, 1879a: 53.  
*Cisseis apicalis* Macleay, 1888: 1232.  
*Cisseis purpureotincta* Macleay, 1888: 1232.
- Neospades simplex** Blackburn  
*Neospades simplex* Blackburn, 1888: 861.  
*Cisseis nigripennis* Macleay, 1888: 1231.  
*Cisseis bella* Blackburn, 1891: 298.  
*Cisseis ignicollis* Kerremans, 1898: 164.
- HYPOCISSEIS** Thomson  
*Hypocisseis* Thomson, 1879a: 49.  
*Maschaliz* Waterhouse, 1887b: 293.  
*Cisseoides* Kerremans, 1893: 118.  
*Brachycisseis* (part) Théry, 1931: 26.  
*Coroebus auctorum*.
- Hypocisseis minuta** Carter (Map 274)  
*Hypocisseis minuta* Carter, 1923a: 175.  
**Hypocisseis ornata** Carter (Map 275)  
*Hypocisseis ornata* Carter, 1923a: 175.  
**Hypocisseis suturalis** (Saunders) (Map 276)  
*Cisseis suturalis* Saunders, 1868b: 60.  
*Hypocisseis suturalis* (Saunders) (Carter, 1923a: 174).  
*Coreabus marmoratus* Macleay, 1872: 248.  
*Cisseoides albopicta* Kerremans, 1898: 171.  
*Hypocisseis aeneipes* Kerremans, 1898: 173.
- ETHON** Gory and Laporte  
*Ethon* Gory and Laporte, 1839: 1.
- Ethon affine** Gory and Laporte (Map 277)  
*Ethon affine* Gory and Laporte, 1839: 4.  
*Diphucrania reichei* Chevrolat, 1838: 82.  
*Ethon proximum* Boheman, 1858: 63.



*Ethon aurifluum* Saunders, 1868b: 56.

*Ethon purpurascens* Saunders, 1868b: 56.

The publication date of Gory and Laporte's monograph is uncertain (Bellamy, 1985; Gardner, 1990) but Chevrolat's paper, often cited as being published in 1837, bears the year 1838 on the title page (von Hayek, pers. comm.). *Ethon affine* is used here for the sake of stability although *reichei* is the senior epithet.

**Ethon corpulentum** Boheman (Map 278)

*Ethon corpulentum* Boheman, 1858: 62 (replacement name).

*Buprestis fissiceps* Laporte and Gory, 1839: 4 (preocc.).

**Ethon fissiceps** (Kirby) (Map 279)

*Buprestis fissiceps* Kirby, 1818b: 458.

*Ethon fissiceps* (Kirby) (Gory and Laporte, 1839: 4).

*Ethon viride* Gory and Laporte, 1839: 6.

*Ethon diversum* Kerremans, 1898: 156.

**Ethon leai** Carter (Map 280)

*Ethon leai* Carter, 1924a: 26.

**Ethon maculatum** Blackburn (Map 281)

*Ethon maculatus* Blackburn, 1887: 250.

#### Tribe AGRILINI

##### AGRILUS Curtis

*Agrilus* Curtis, 1825, No. 67.

*Anambus* Thomson, 1864: 38.

*Engyaulus* Waterhouse, 1889: 50.

*Teres* Harris, 1829: 2.

*Uragrilus* Semenov-Tian-Shianskij, 1935: 276.

*Paradomorphus* Waterhouse, 1887a: 183.

**Agrilus australasiae** Gory and Laporte (Map 282)

*Agrilus australasiae* Gory and Laporte, 1839: 21.

*Agrilus hypoleucus* Gory and Laporte, 1839: 37.

*Agrilus assimilis* Hope, 1846: 217.

*Agrilus purpuratus* Hope, 1846: 217.

*Agrilus flavo-taeniatus* Thomson, 1879a: 73.

*Agrilus hypoleucus* ssp. *cooki* Obenberger, 1923b: 77.

*Agrilus hypoleucus* ssp. *tasmanicus* Obenberger, 1923b: 77.

*Agrilus danesi* Obenberger, 1923b: 79.

*Agrilus domini* Obenberger, 1923b: 78.

*Agrilus raphelisi* Obenberger, 1923b: 78.

*Agrilus vandiemeni* Obenberger, 1923b: 78.

**Agrilus deauratus** Macleay (Map 283)

*Agrilus deauratus* Macleay, 1872: 249.

**Agrilus frenchi** Blackburn

*Agrilus frenchi* Blackburn, 1891: 302.

#### Subfamily TRACHYINAE Gory and Laporte

*Trachysites* Gory and Laporte, 1840: 1.

*Traches* Carter and Théry, 1929: 269.

#### Tribe GERMARICINI Cobos

*Germaricini* Cobos, 1979: 428.

##### GERMARICA Blackburn

*Germarica* Blackburn, 1887: 257.

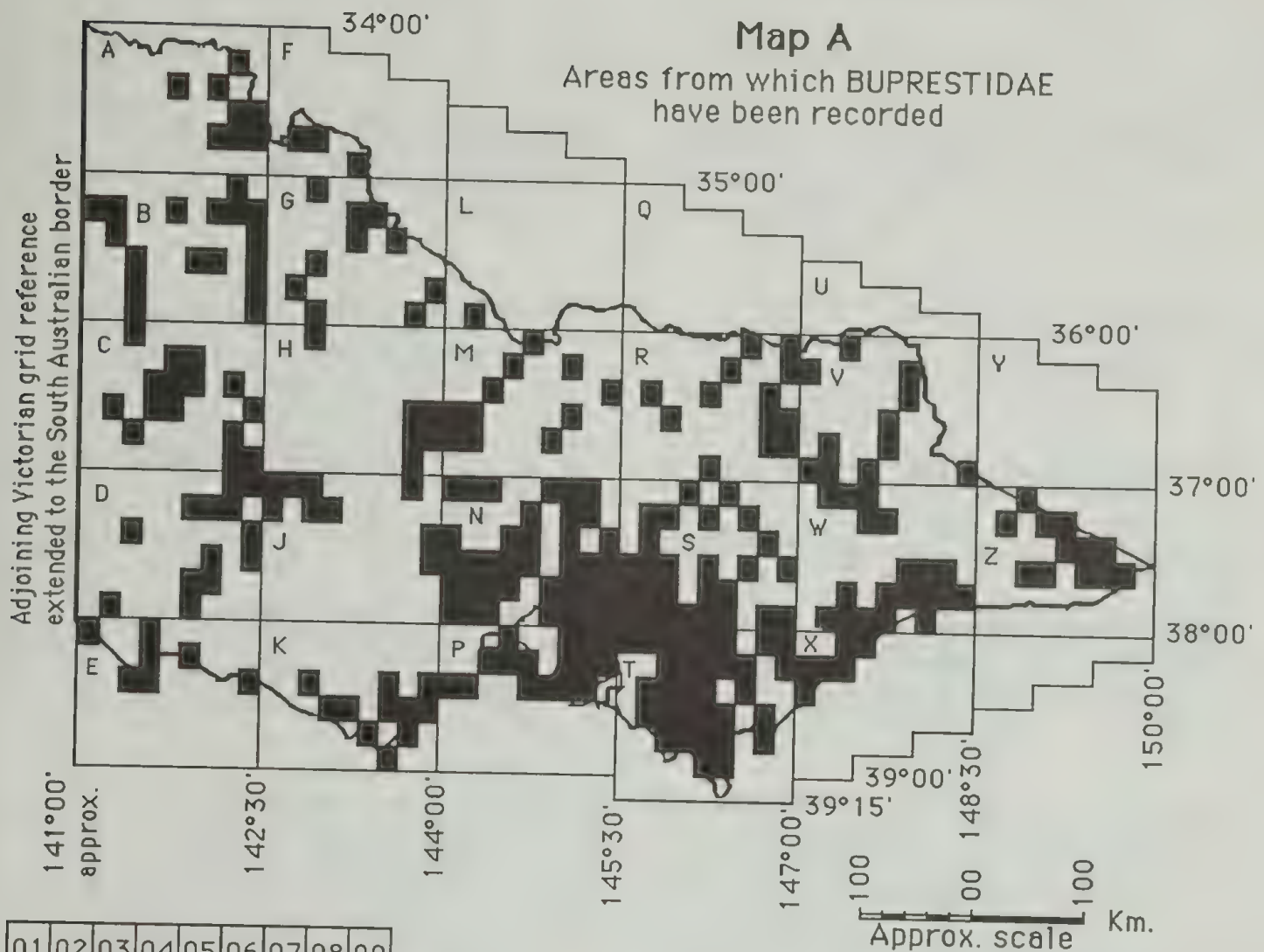
**Germarica lilliputana** (Thomson) (Map 284)

*Aphanisticus lilliputanus* Thomson, 1879a: 75.

*Germarica lilliputana* (Thomson) (Carter, 1924a: 30).

*Germarica casuarinae* Blackburn, 1887: 257.





01	02	03	04	05	06	07	08	09
10	11	12	13	14	15	16	17	18
19	20	21	22	23	24	25	26	27
28	29	30	31	32	33	34	35	36
37	38	39	40	41	42	43	44	45
46	47	48	49	50	51	52	53	54
55	56	57	58	59	60	61	62	63

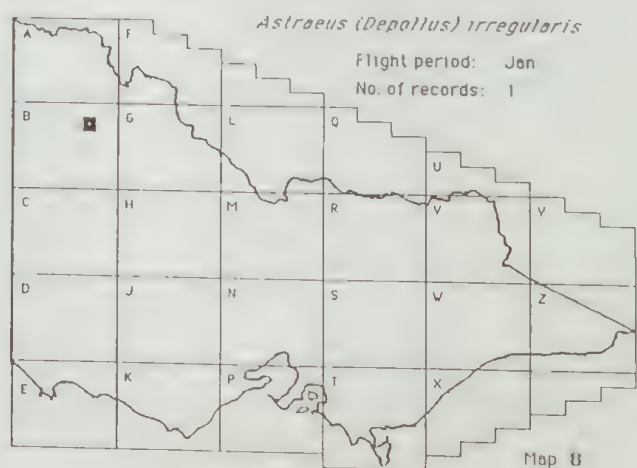
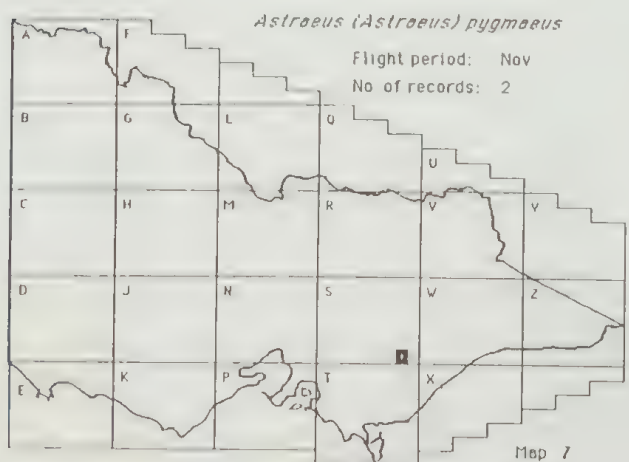
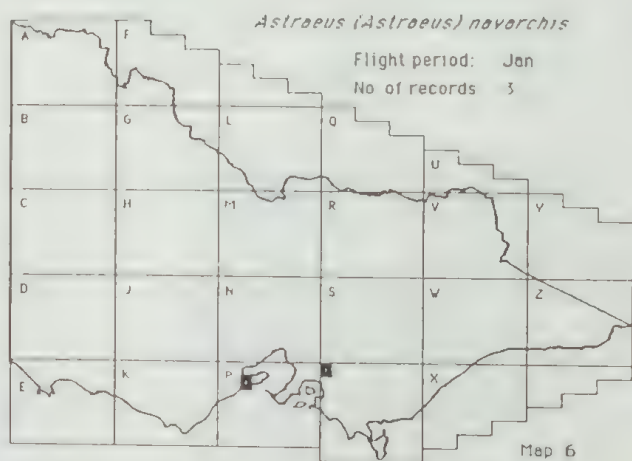
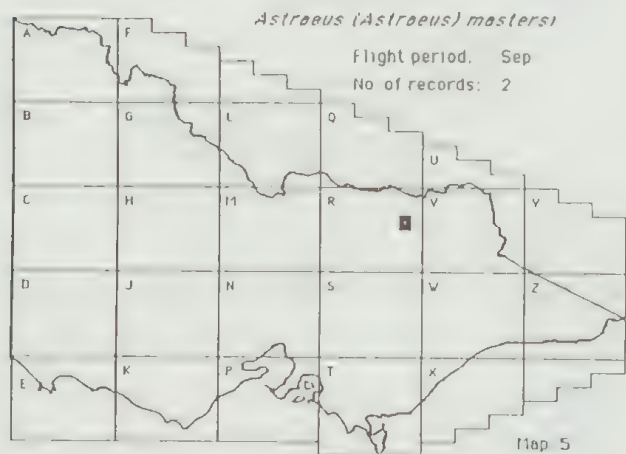
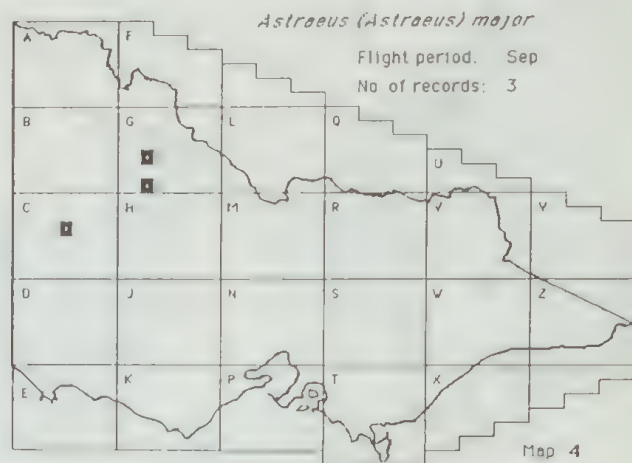
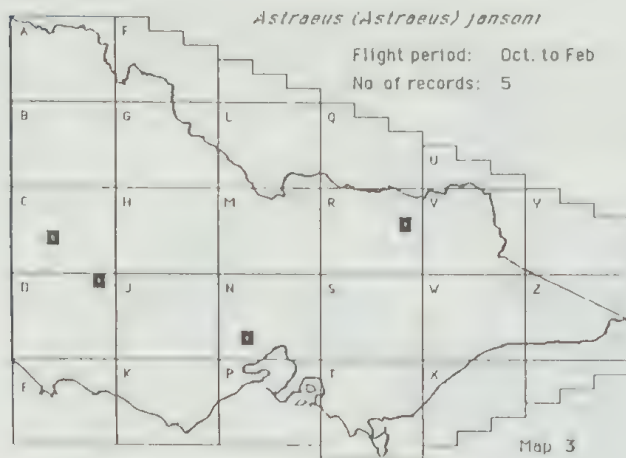
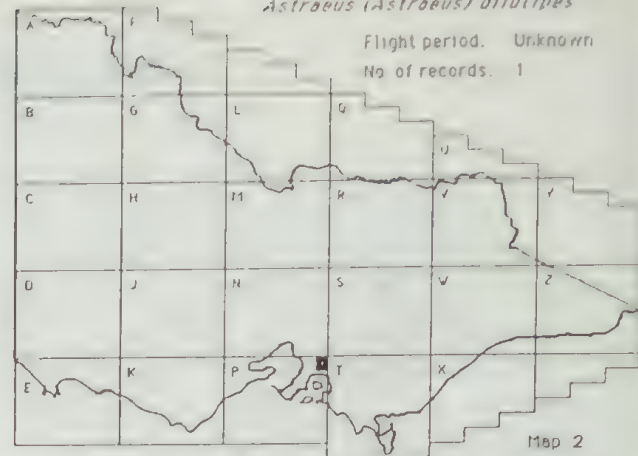
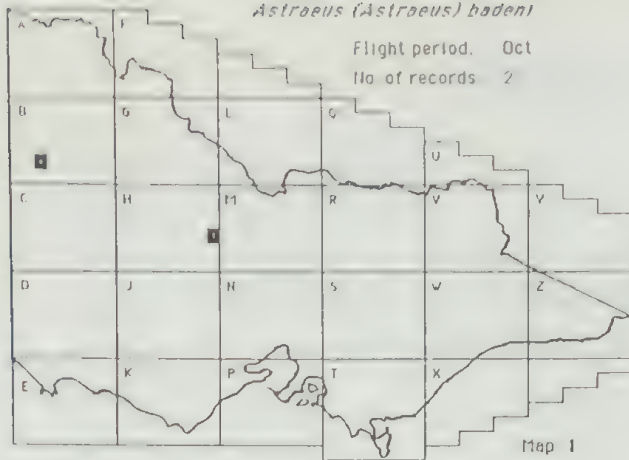
Numbers 55-64 refer to  
the 'T' block area only.

Map A. Areas from which Buprestidae have been recorded.

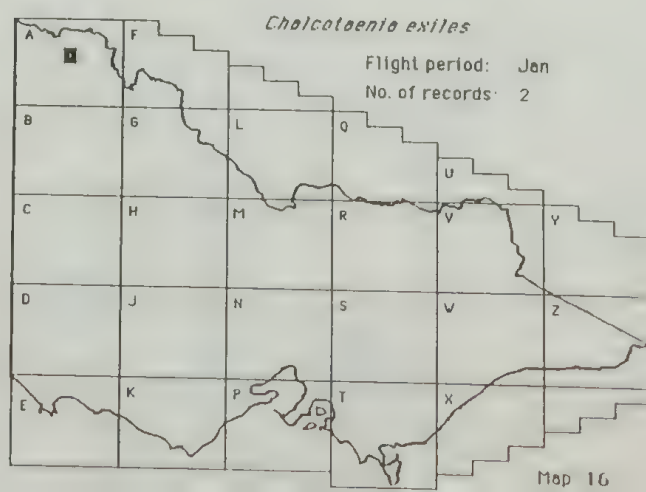
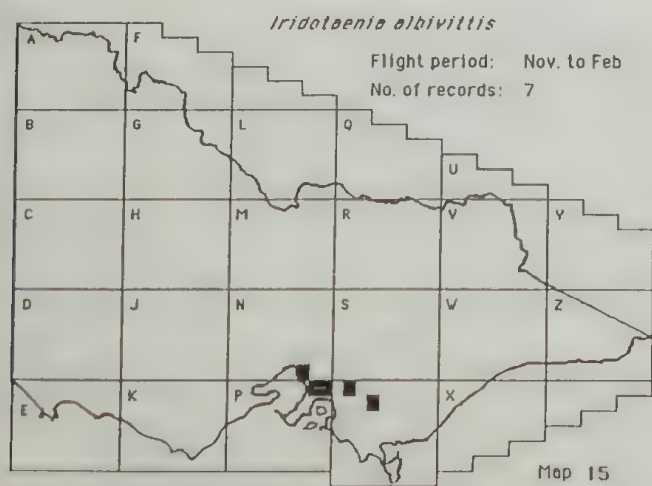
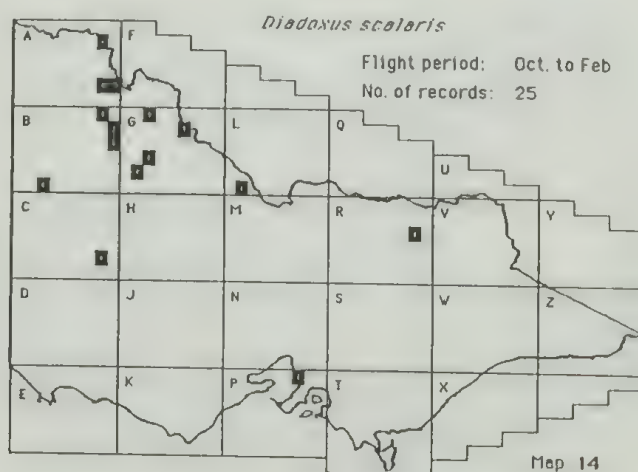
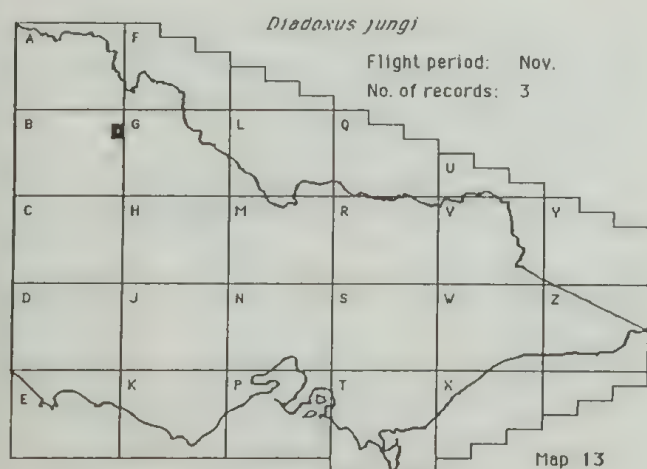
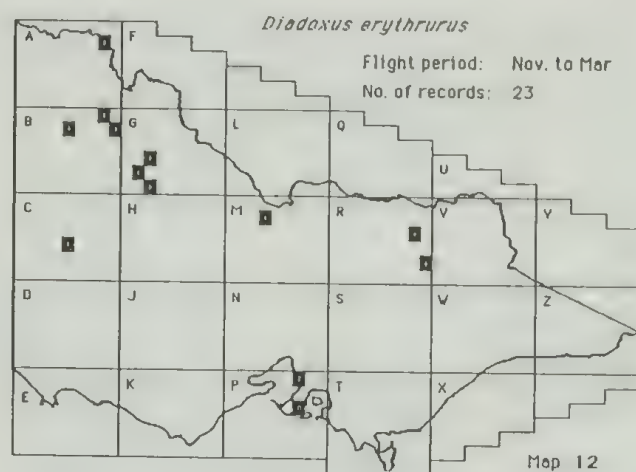
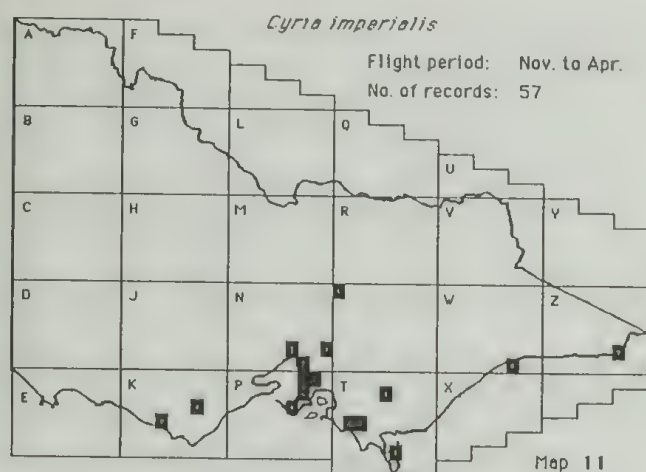
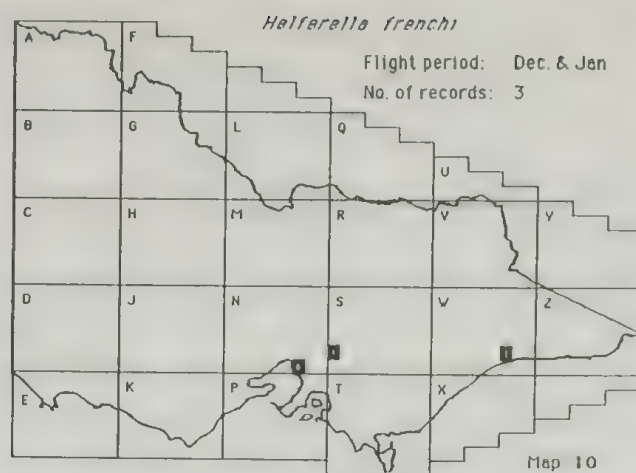
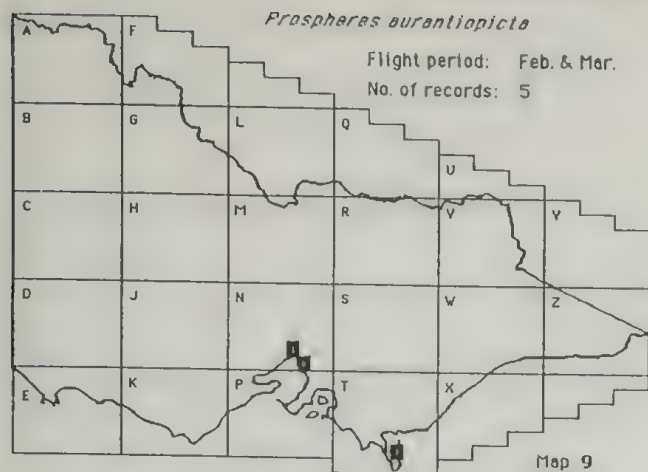
Letter map codes used for the 1:250,000 series R502 maps

- A Mildura — SI 54-11
- B Ouyen — SI 54-15
- C Horsham — SJ 54-3
- D Hamilton — SJ 54-7
- E Portland — SJ 54-11
- F Belranald — SI 54-12
- G Swan Hill — SI 54-16
- H St Arnaud — SJ 54-4
- J Ballarat — SJ 54-8
- K Colac — SJ 54-12
- L Deniliquin — SI 55-13
- M Bendigo — SJ 55-1
- N Melbourne — SJ 55-5
- P Queenscliff — SJ 55-9
- Q Jerilderie — SI 55-14
- R Wangaratta — SJ 55-2
- S Warburton — SJ 55-6
- T Warragul — SJ 55-10
- U Wagga Wagga — SL 55-15
- V Tallangatta — SJ 55-3
- W Bairnsdale — SJ 55-7
- X Sale — SJ 55-11
- Y Bega — SJ 55-5
- Z Mallacoota — SJ 55-8

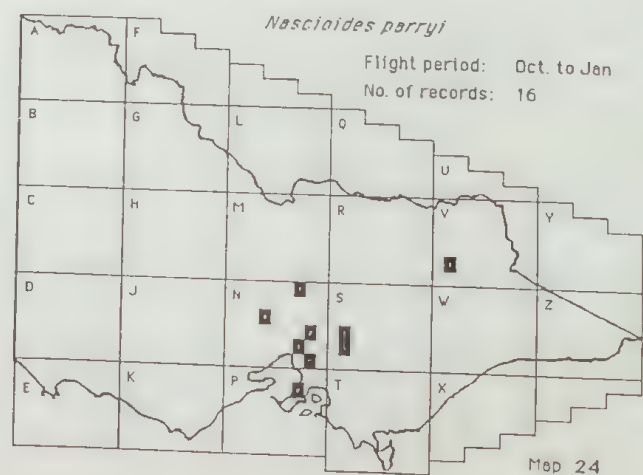
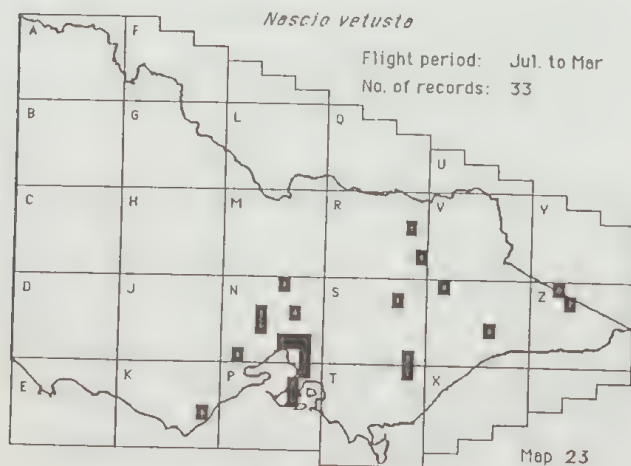
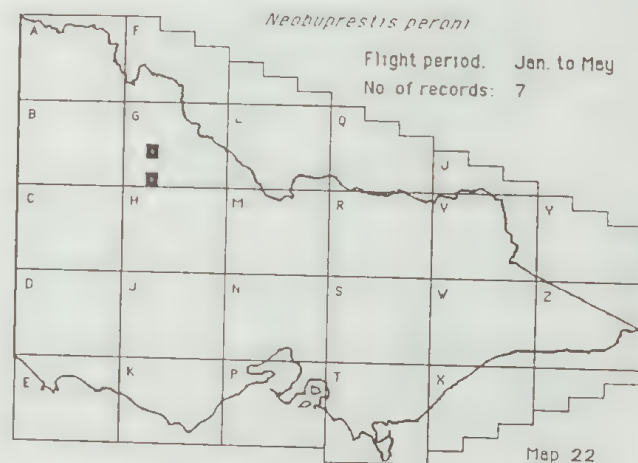
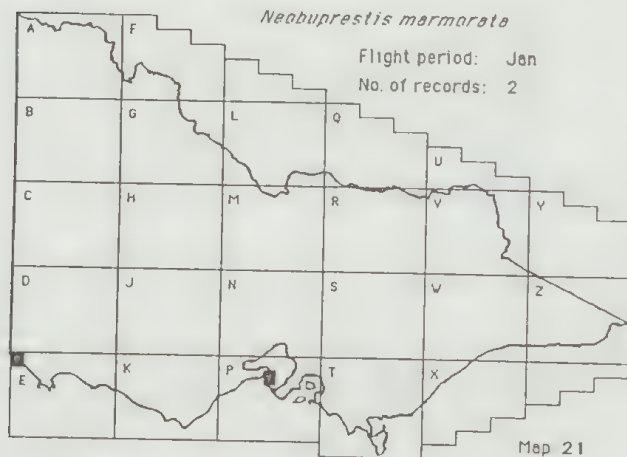
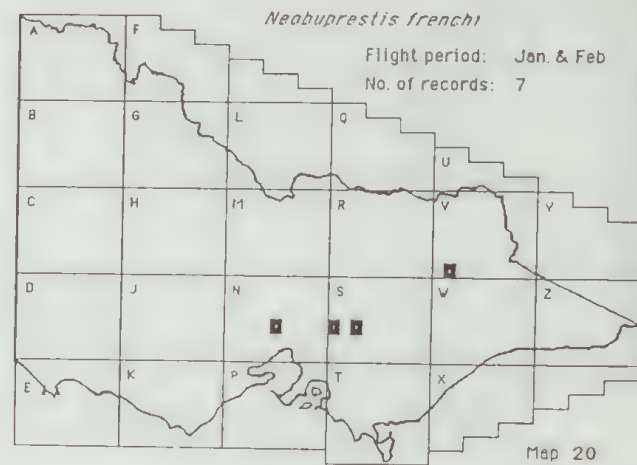
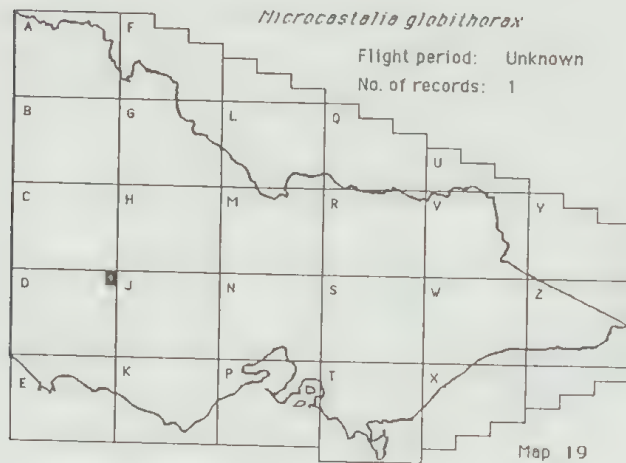
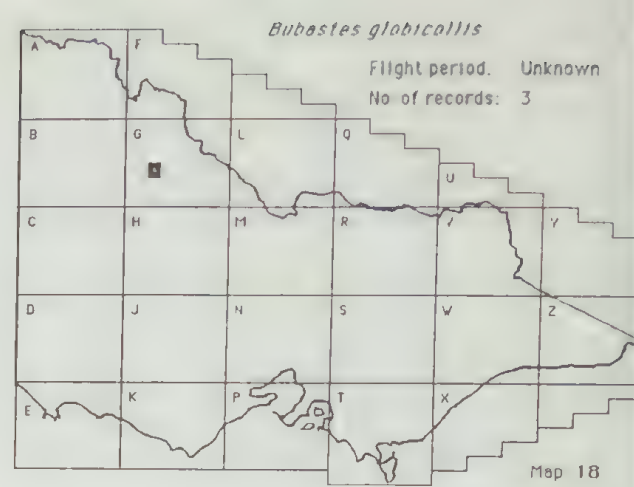
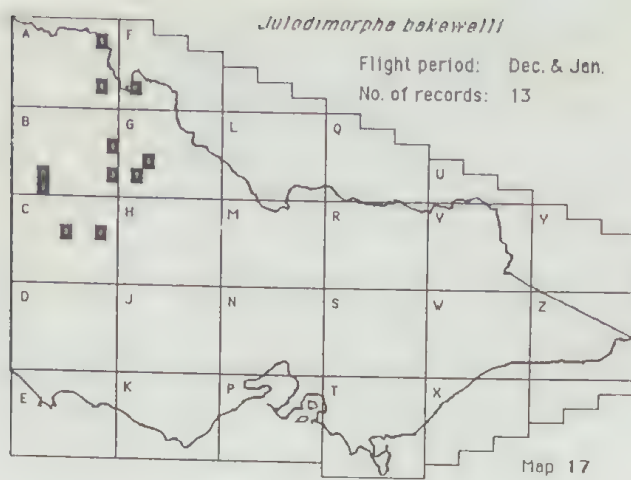




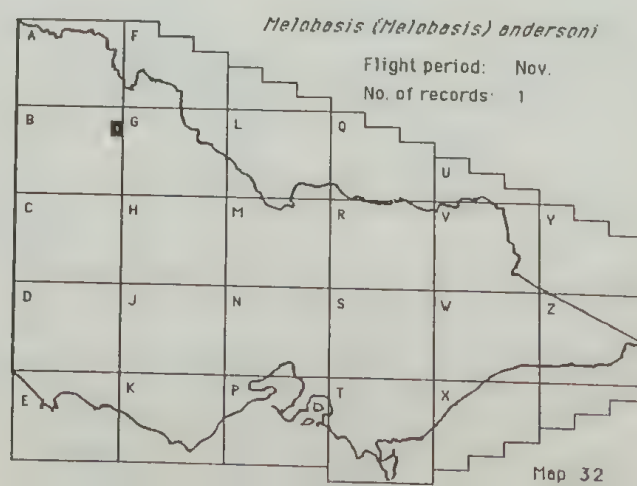
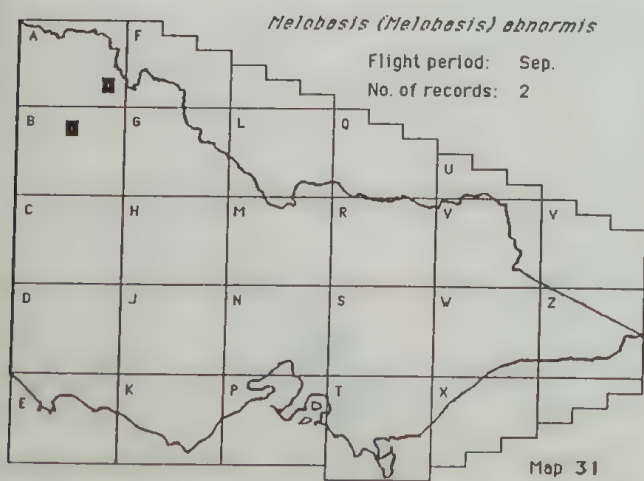
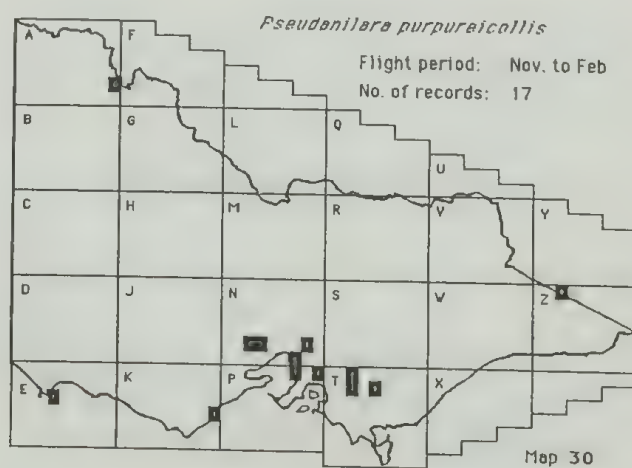
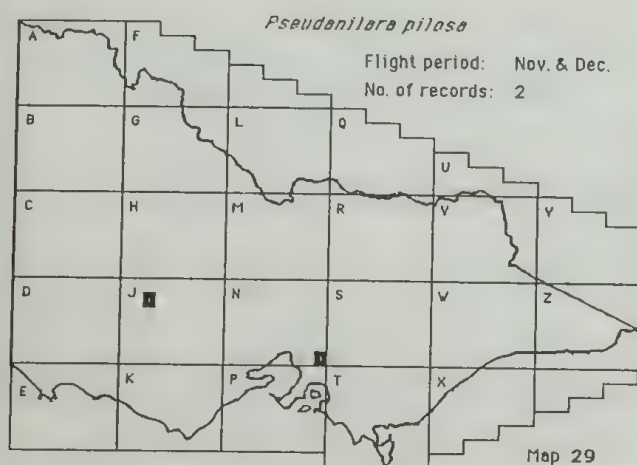
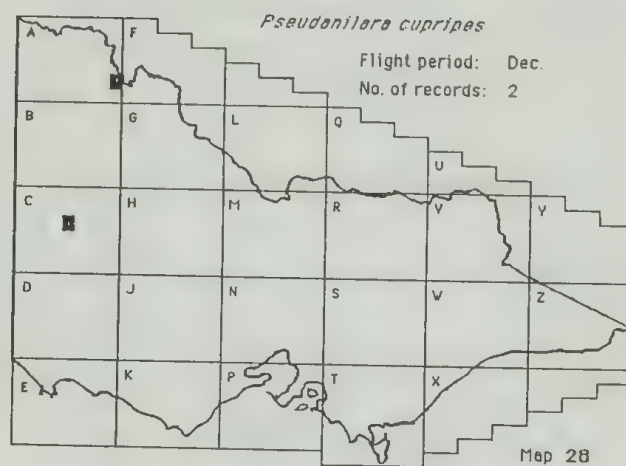
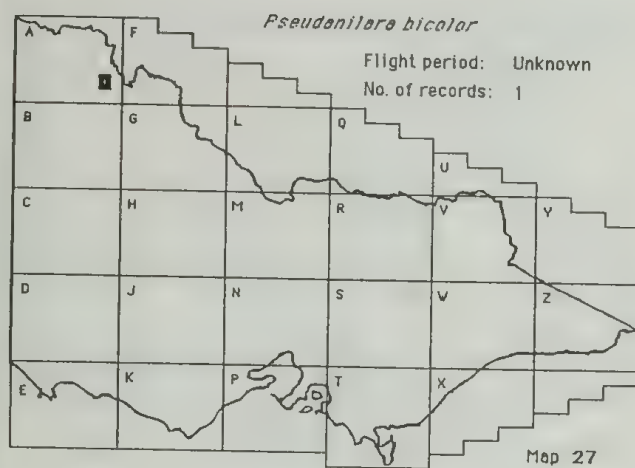
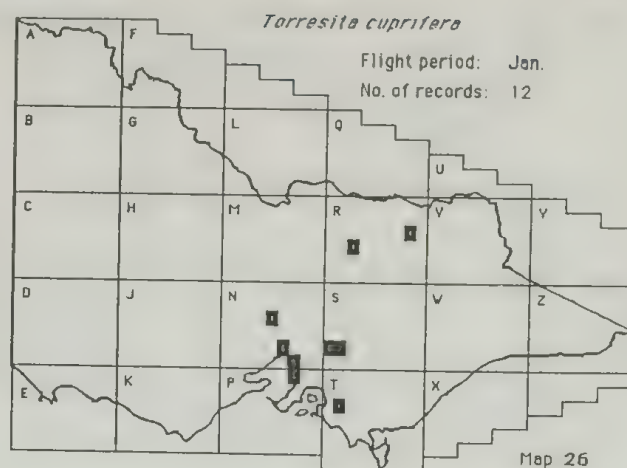
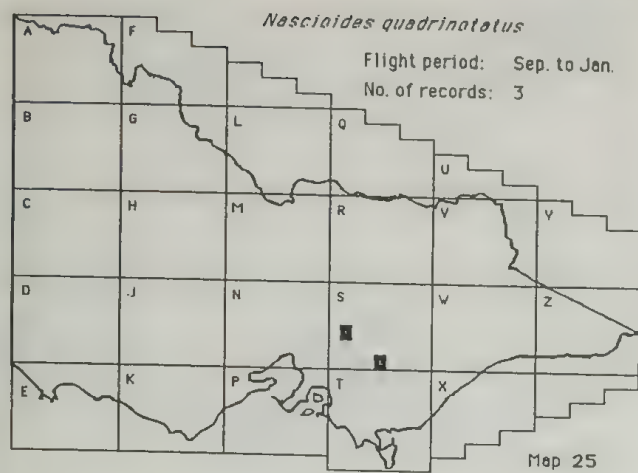




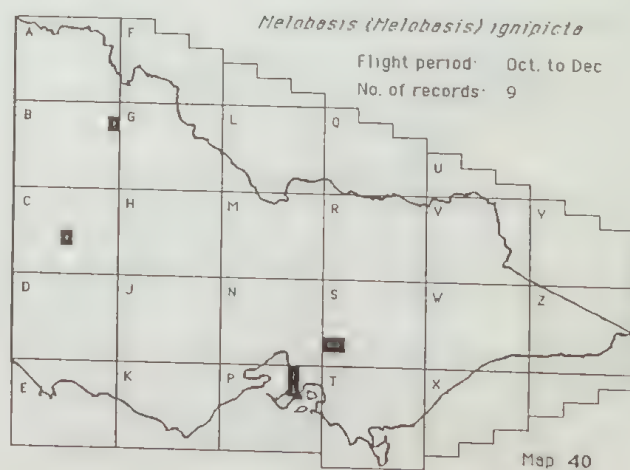
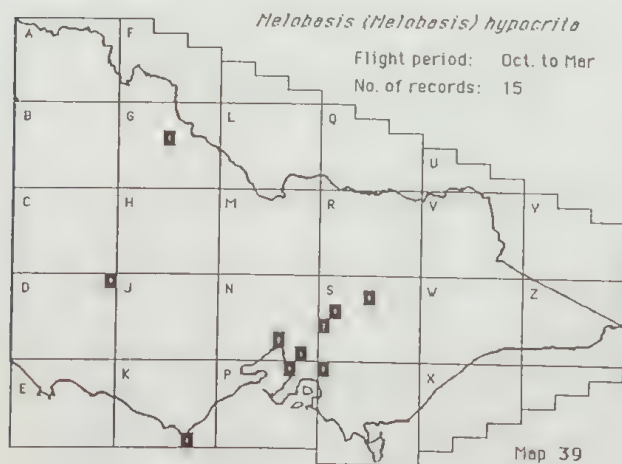
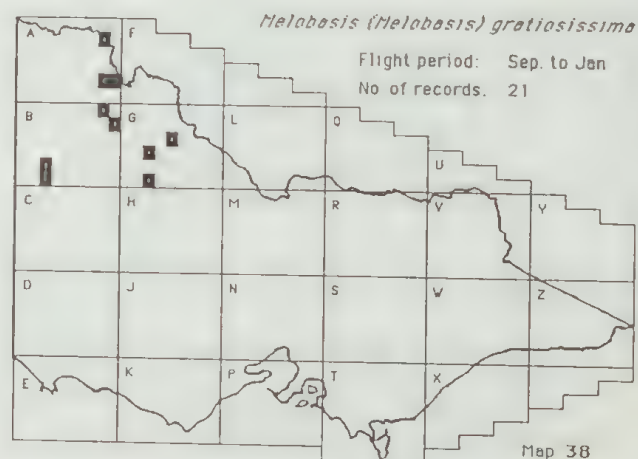
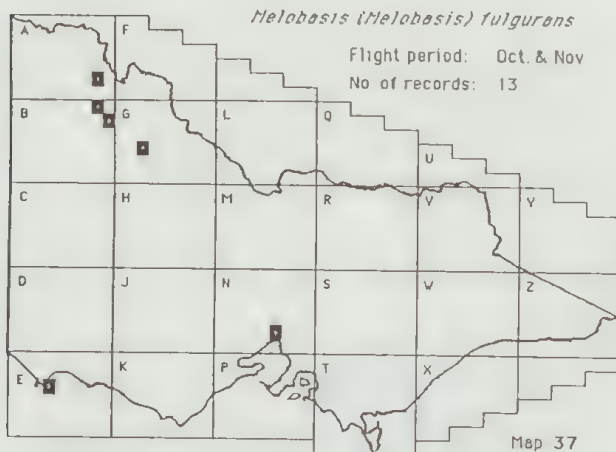
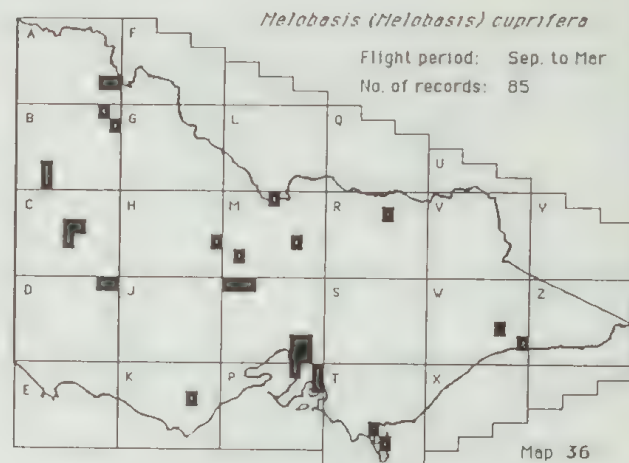
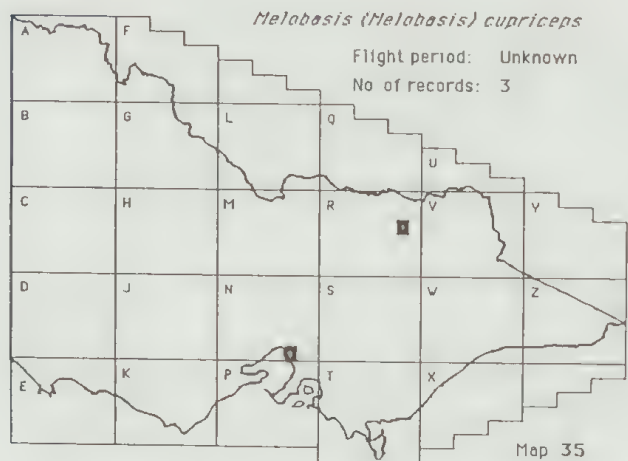
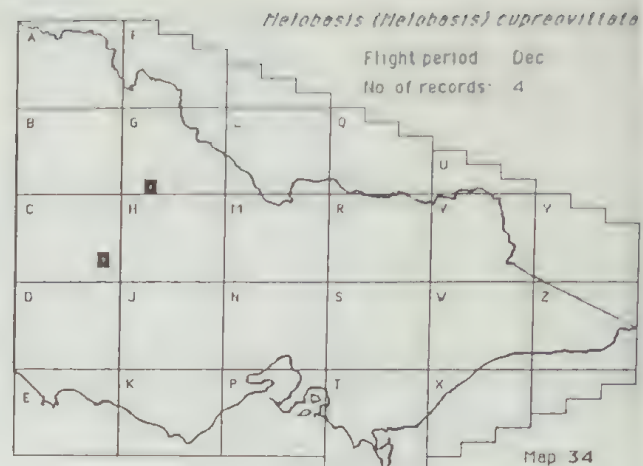
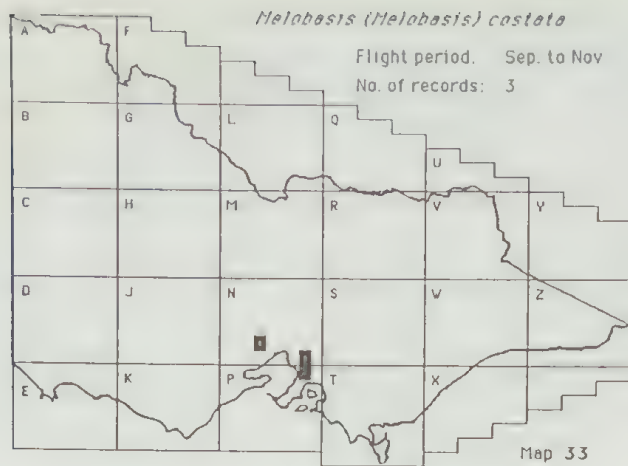




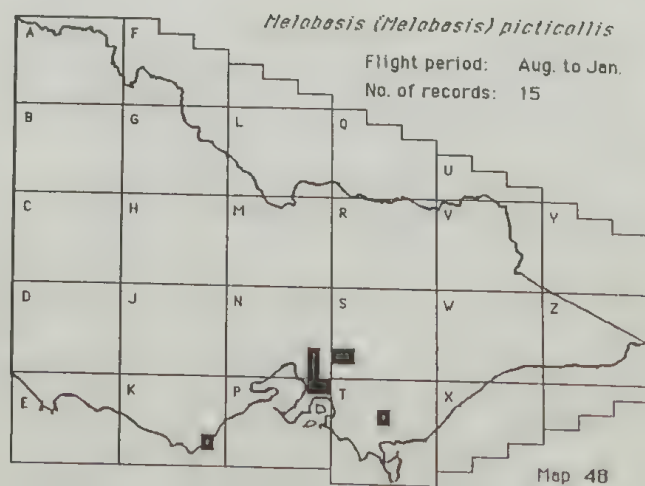
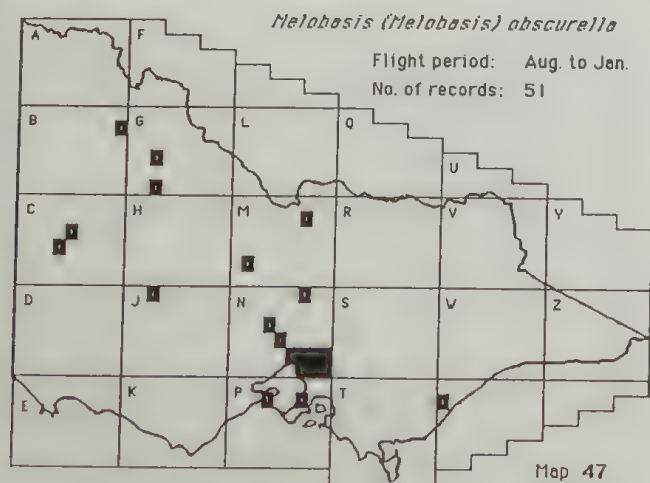
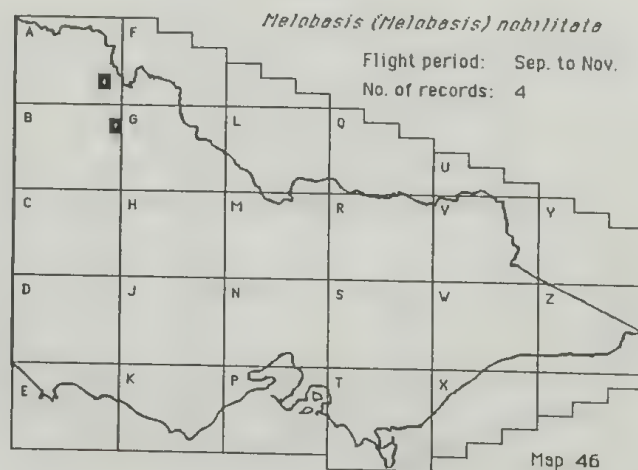
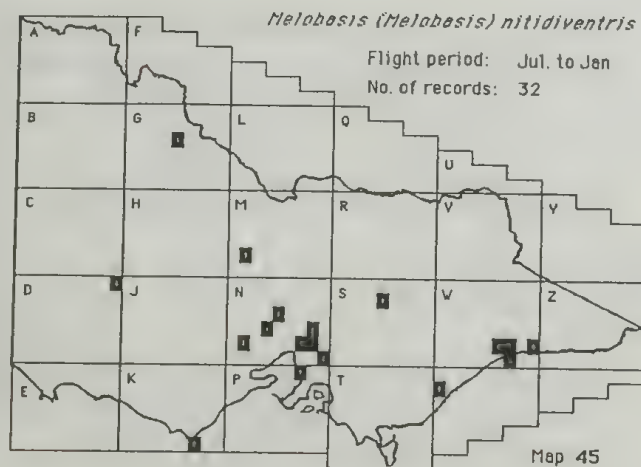
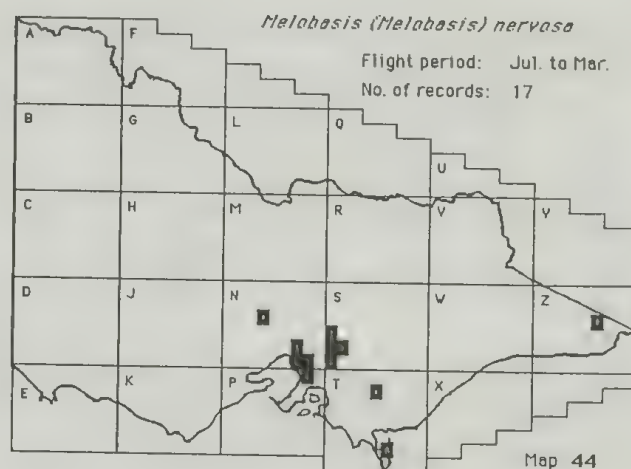
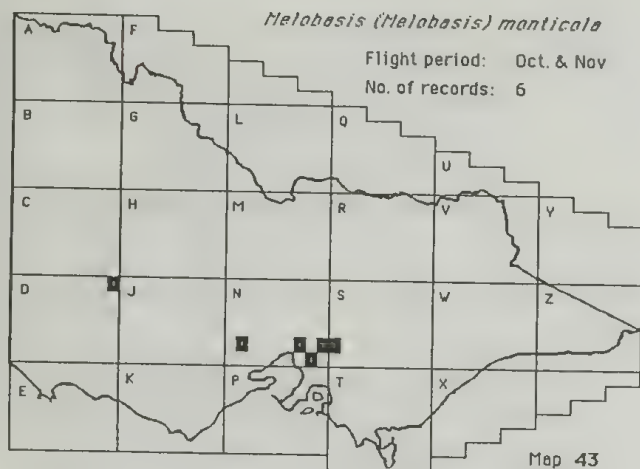
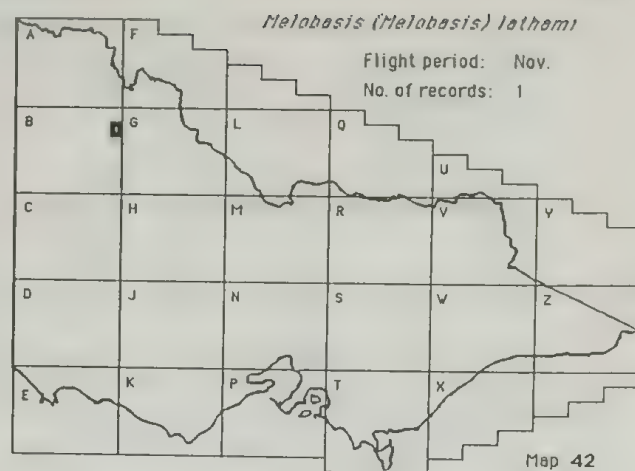
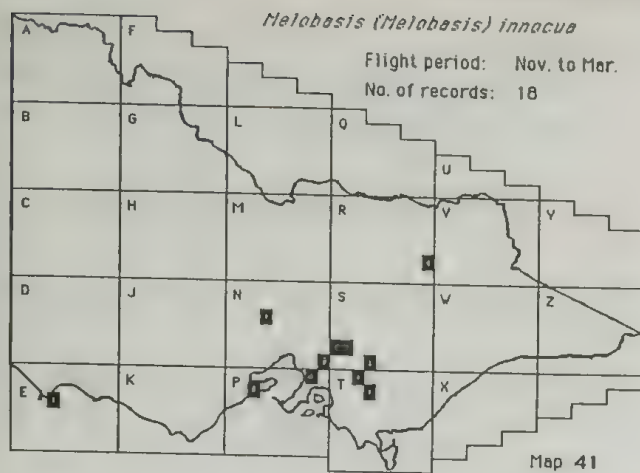




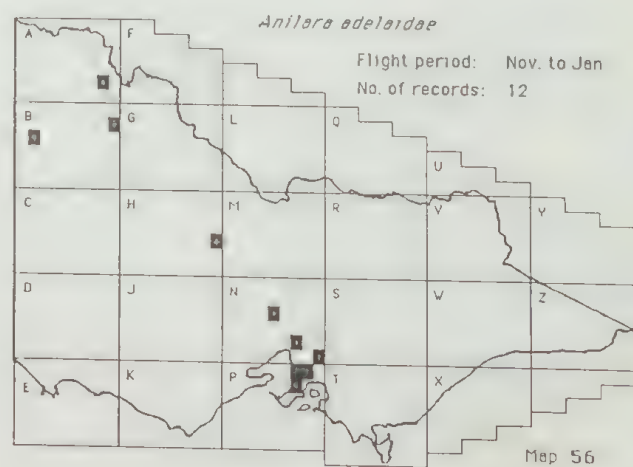
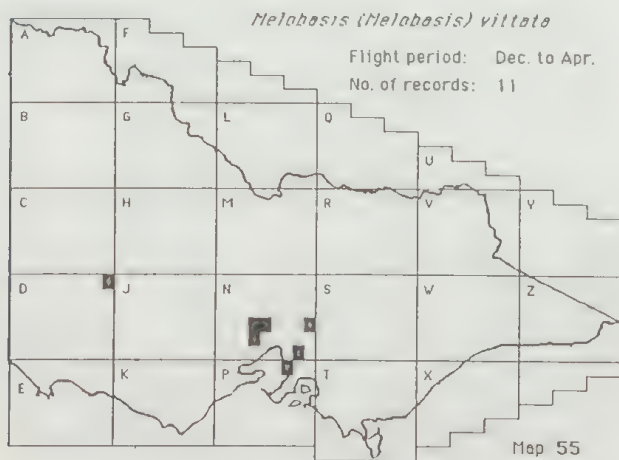
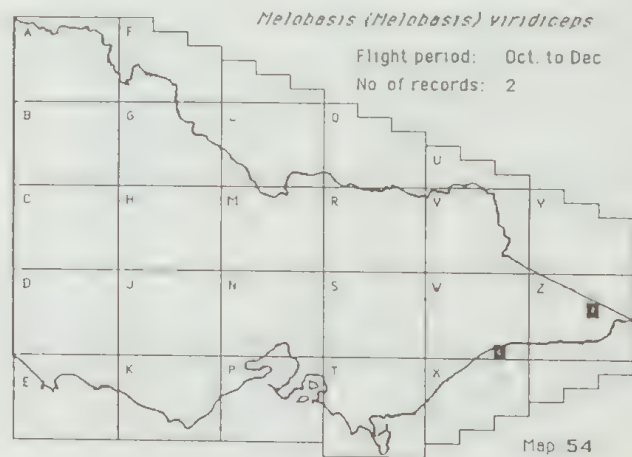
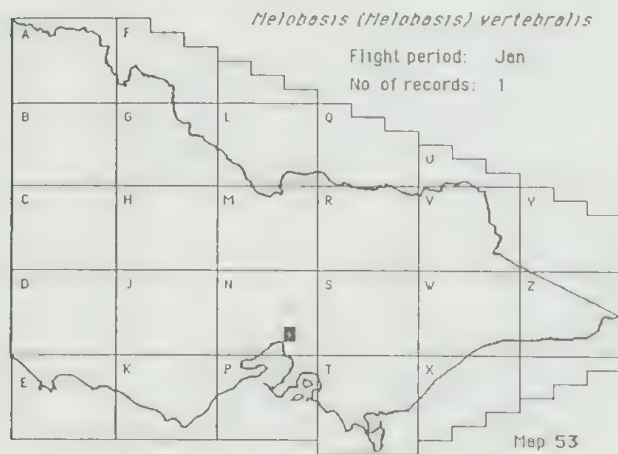
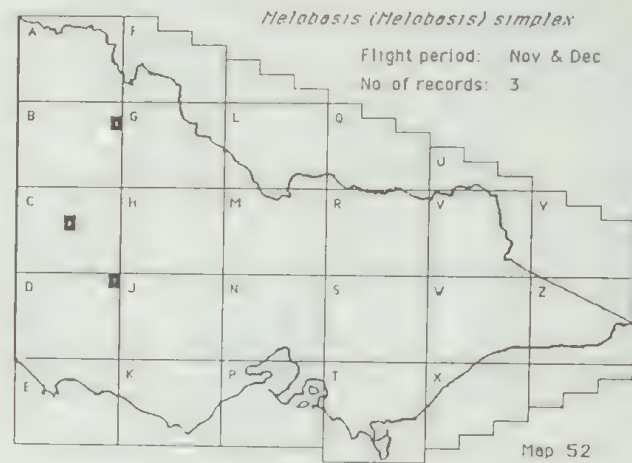
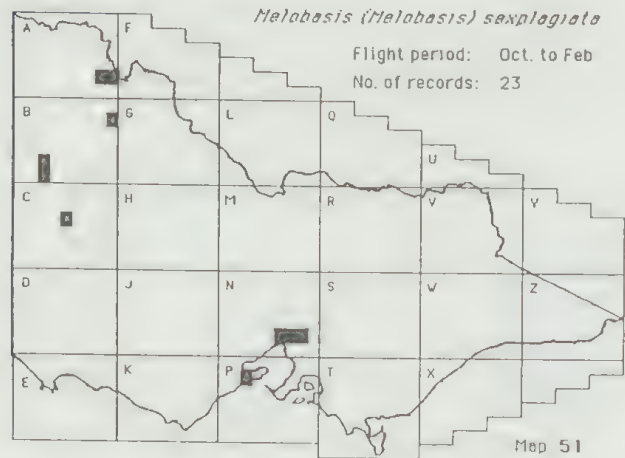
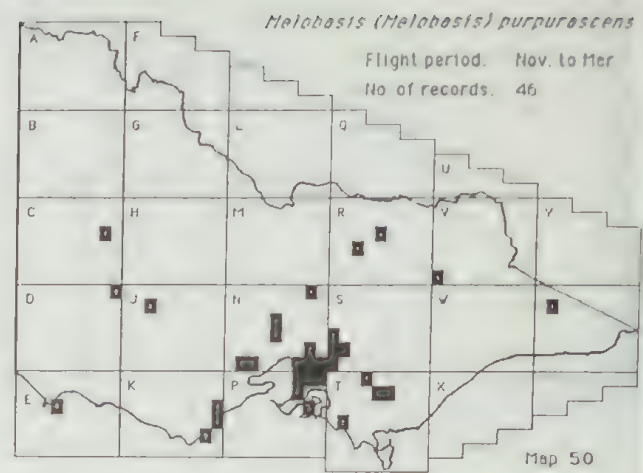
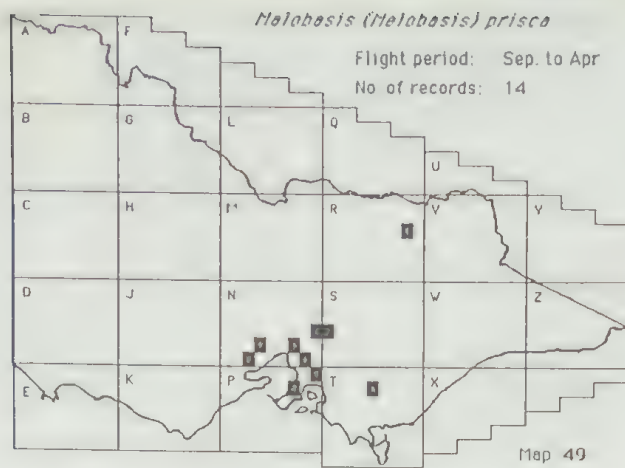




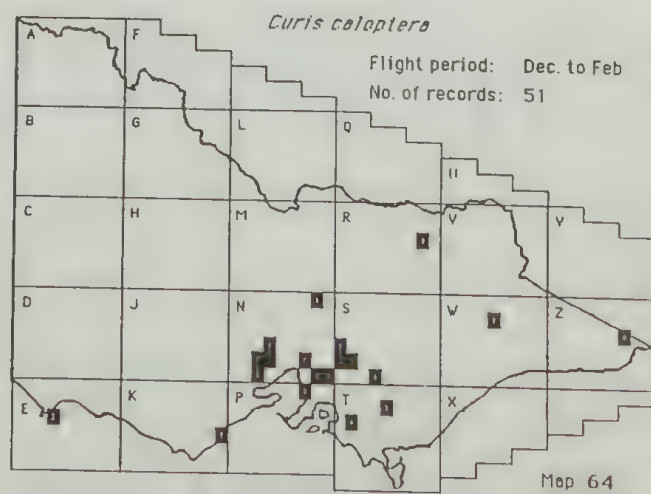
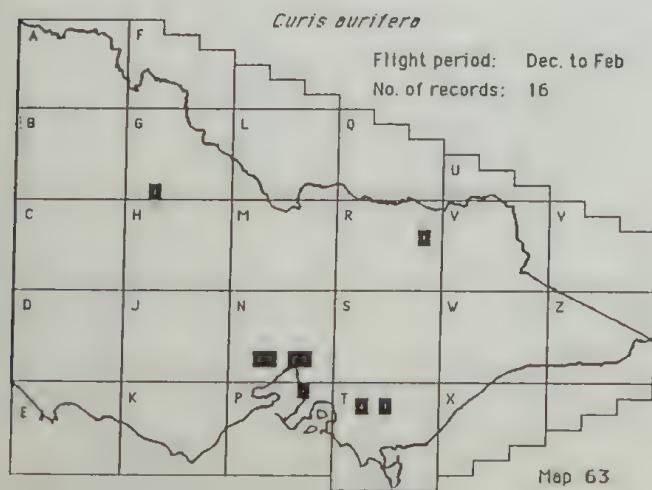
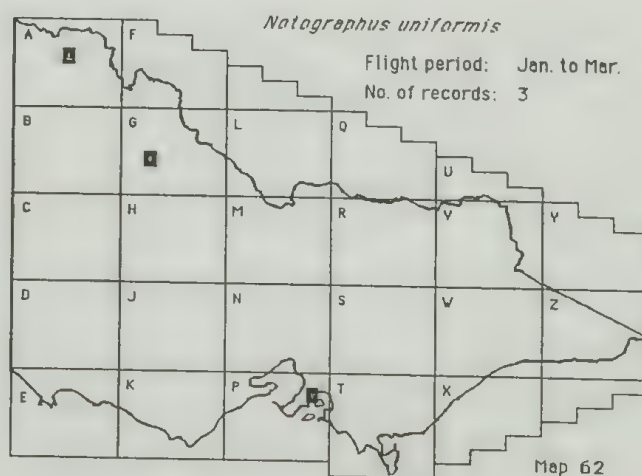
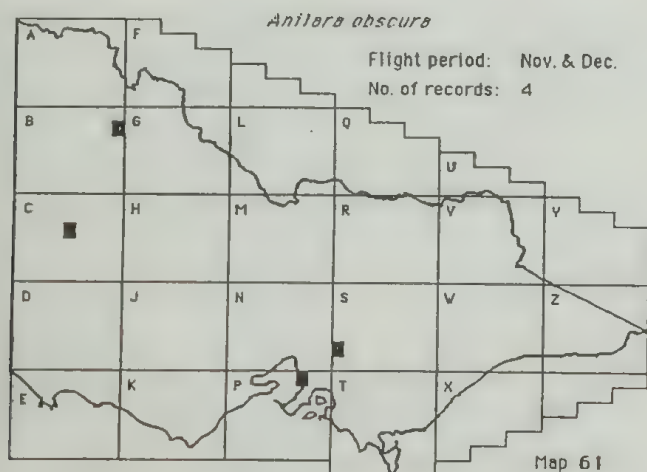
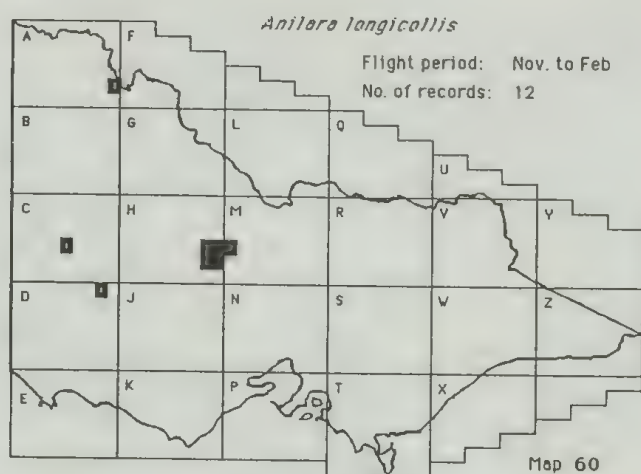
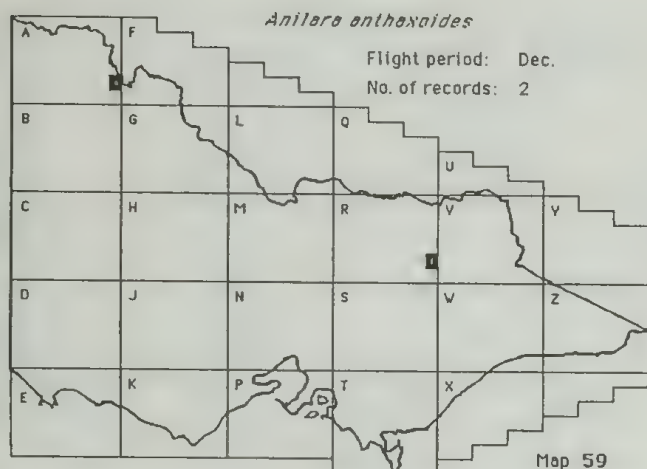
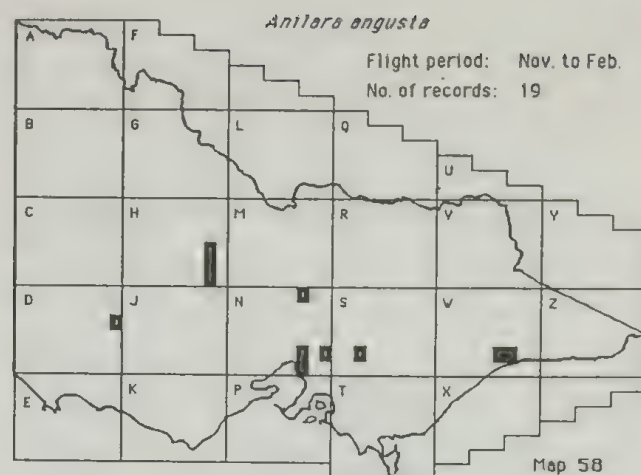
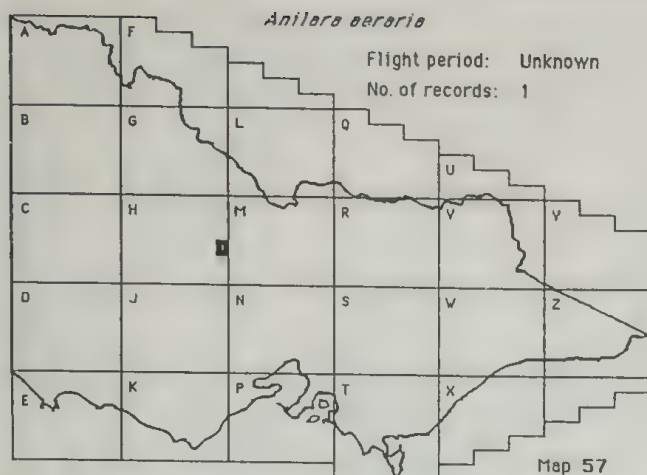




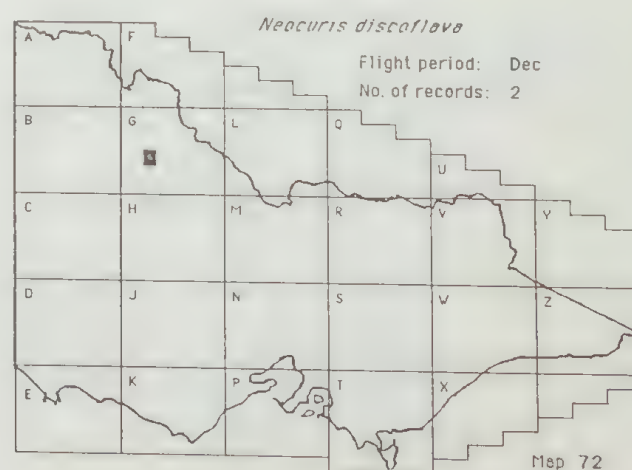
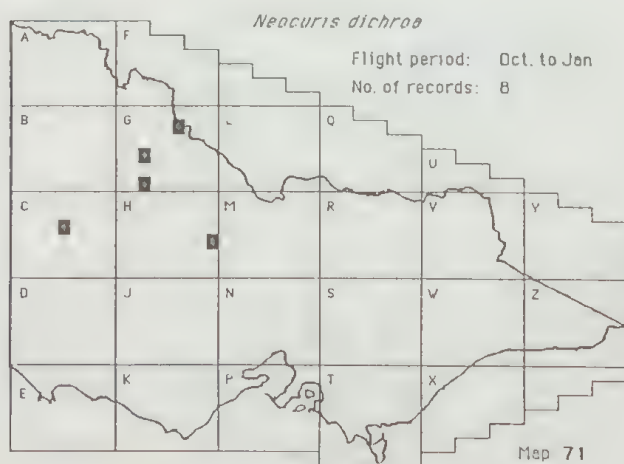
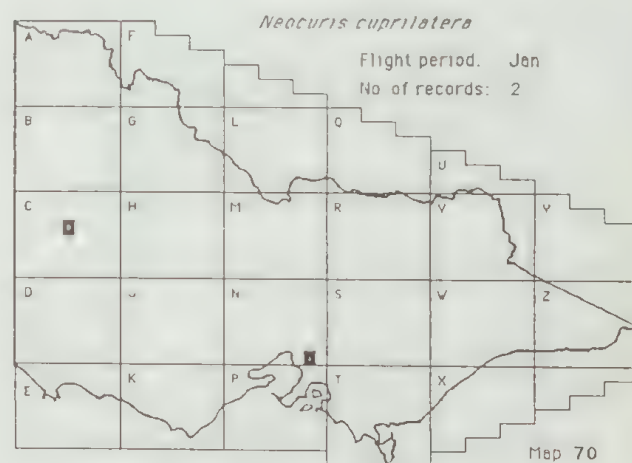
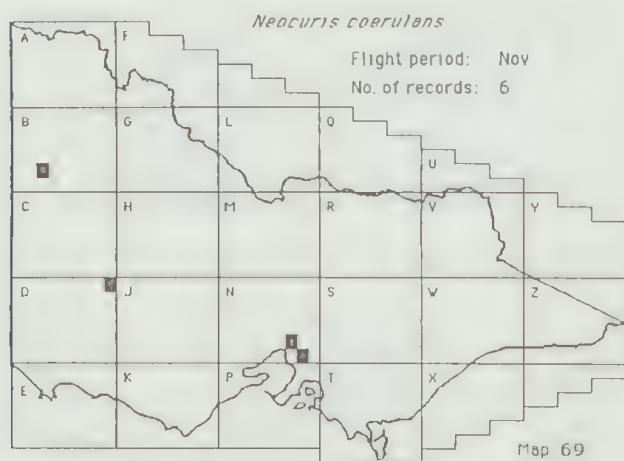
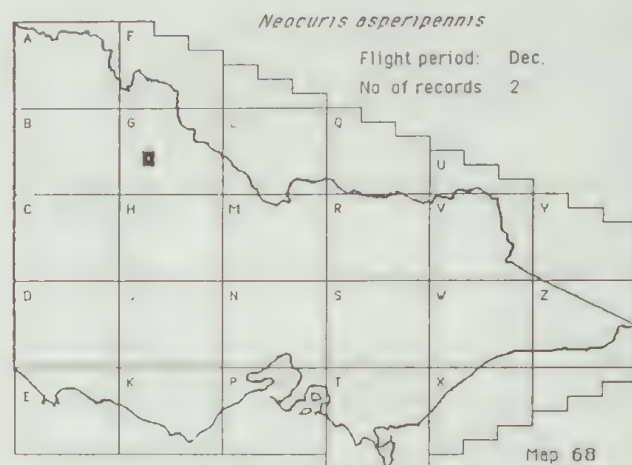
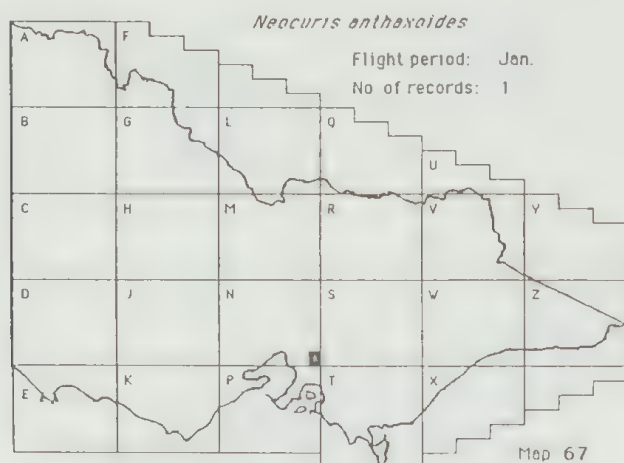
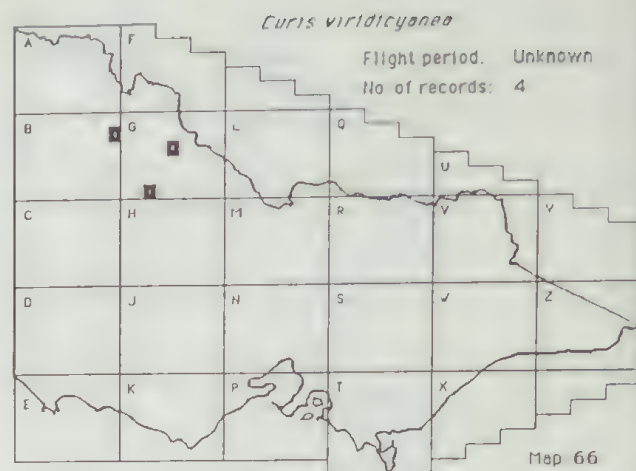
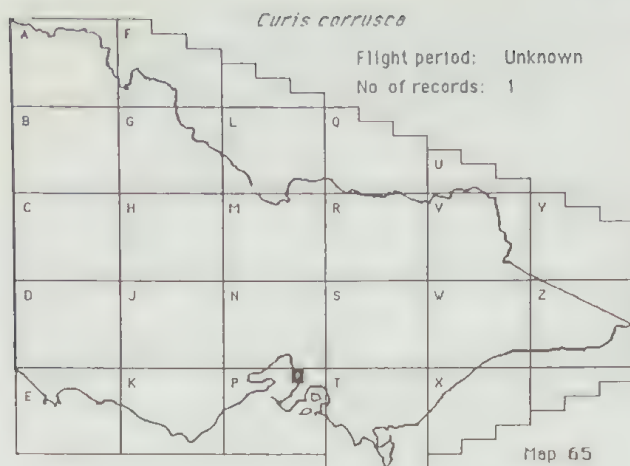




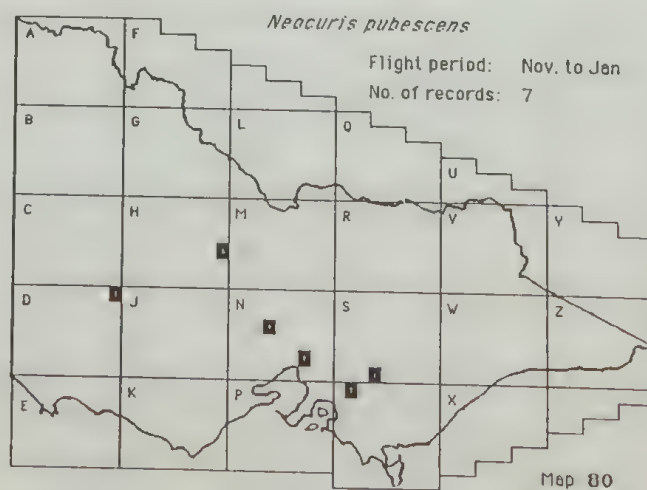
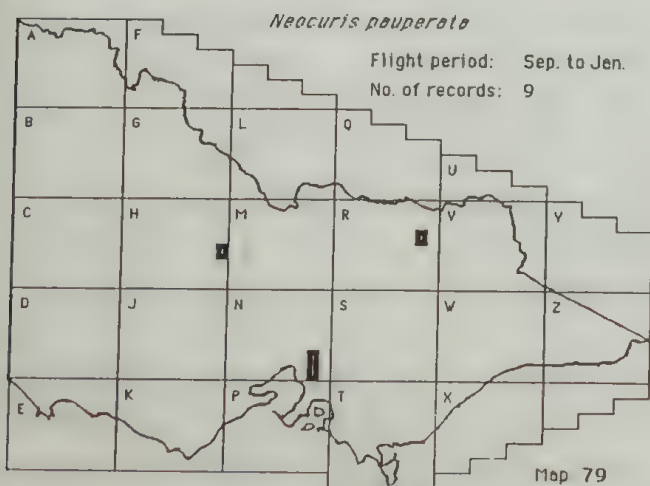
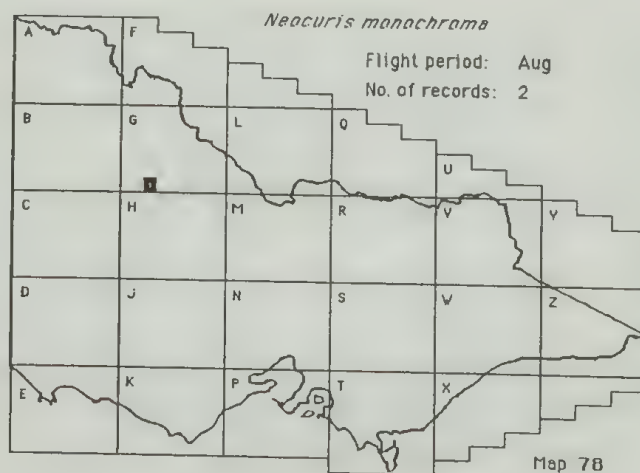
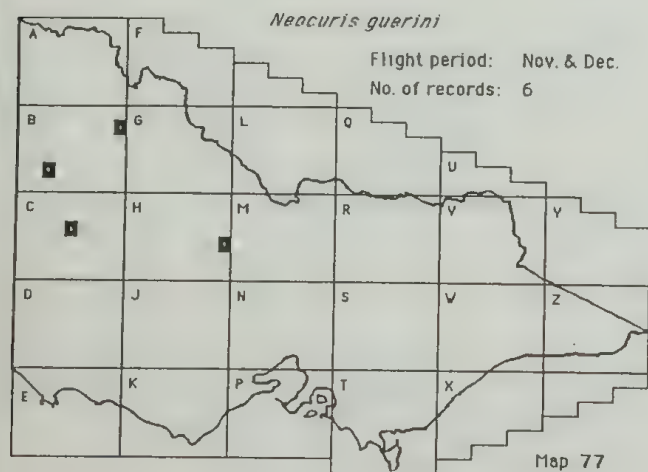
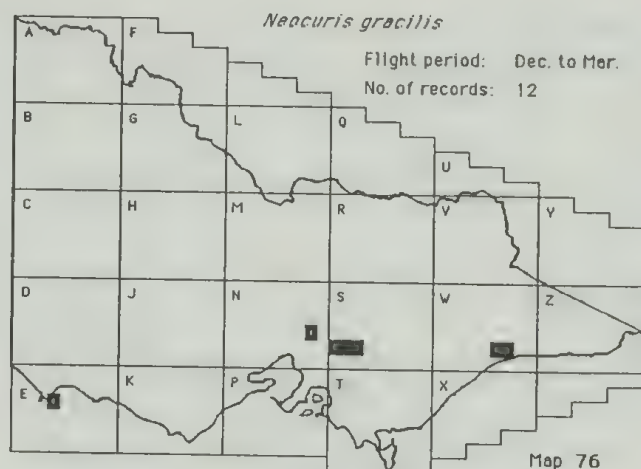
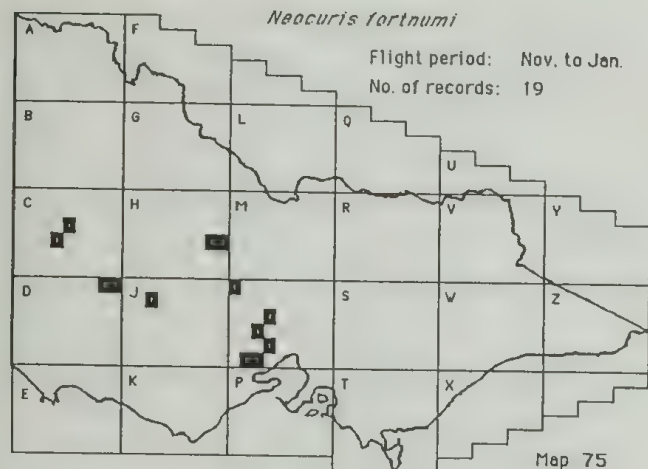
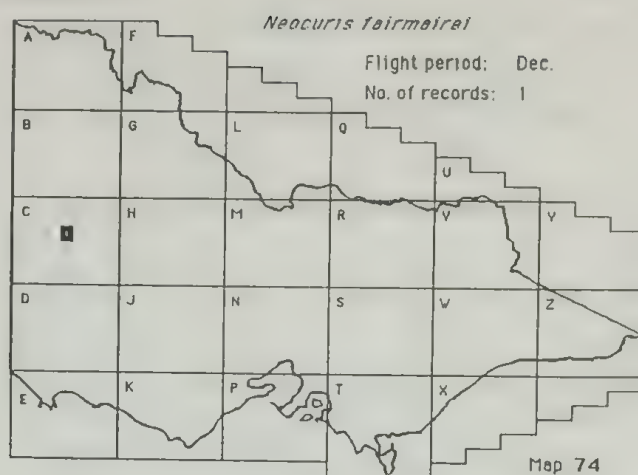
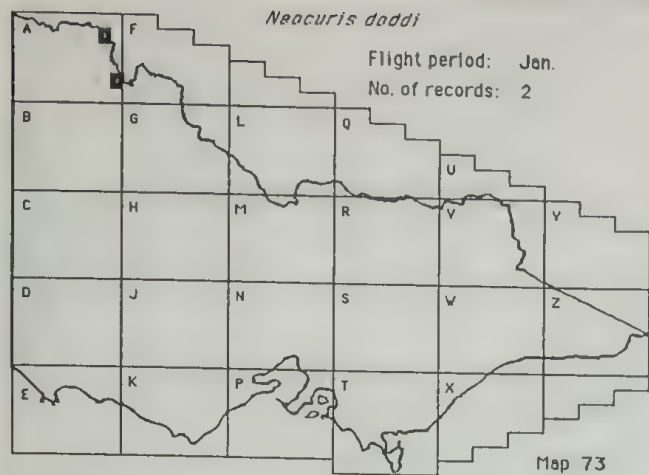


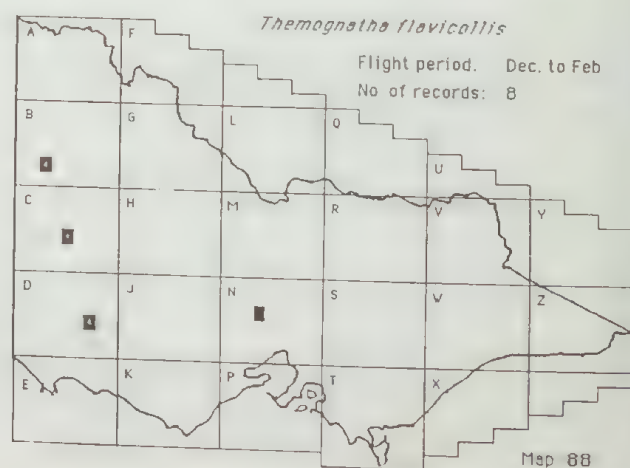
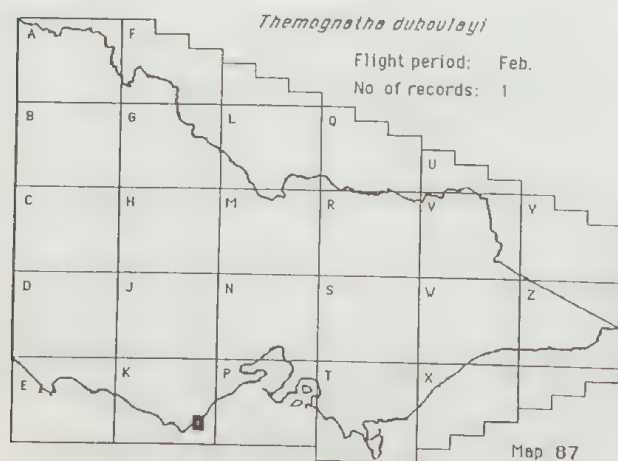
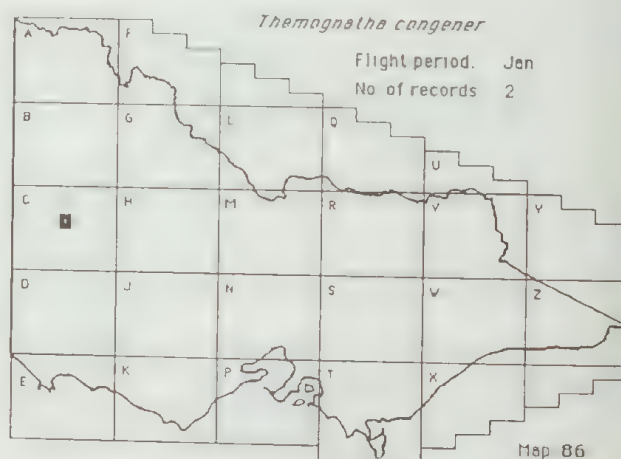
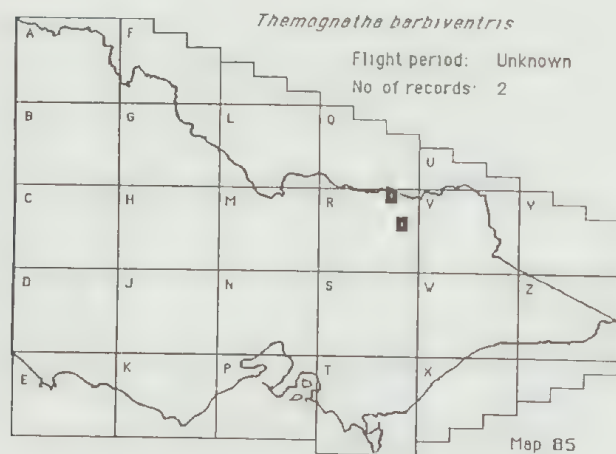
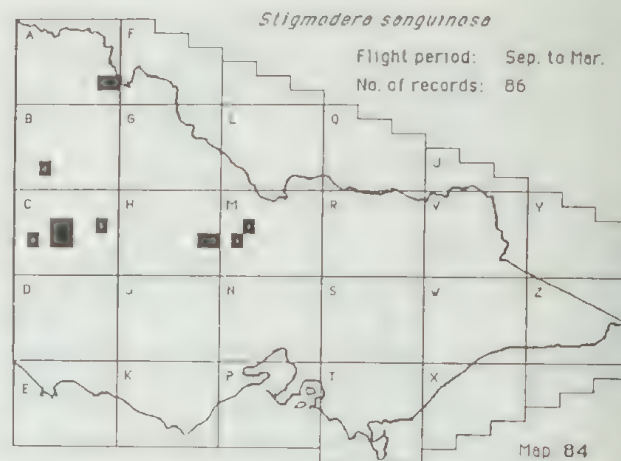
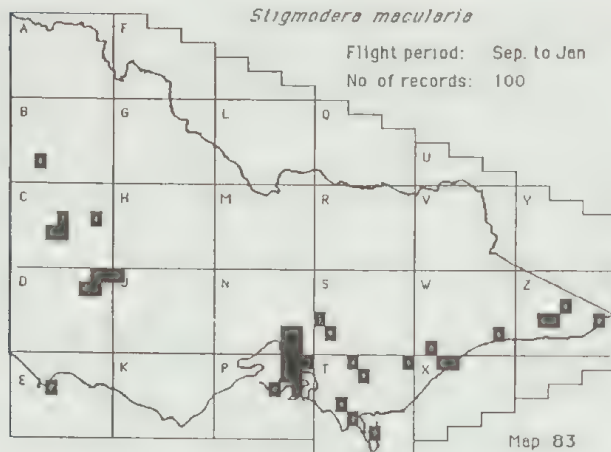
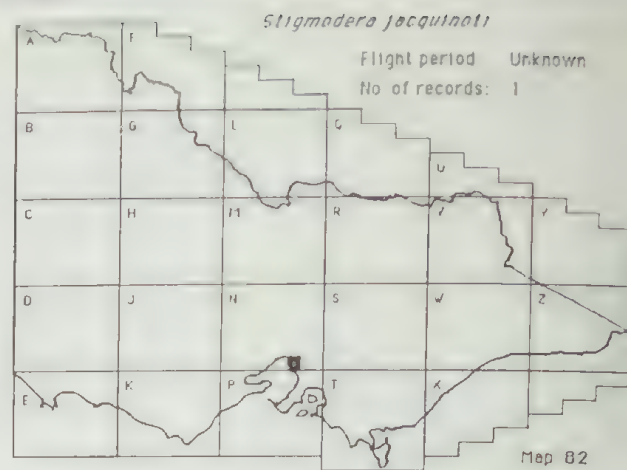
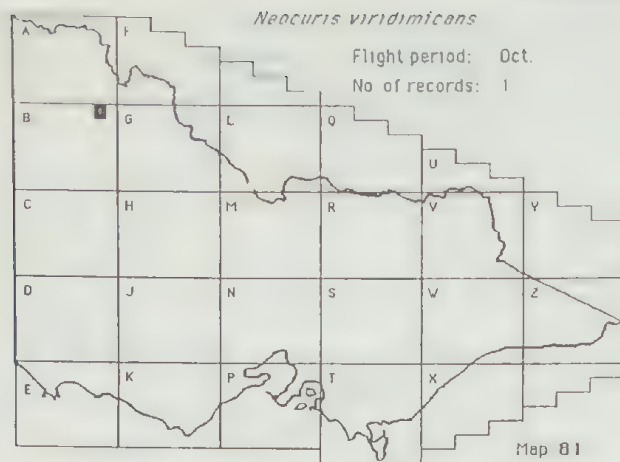




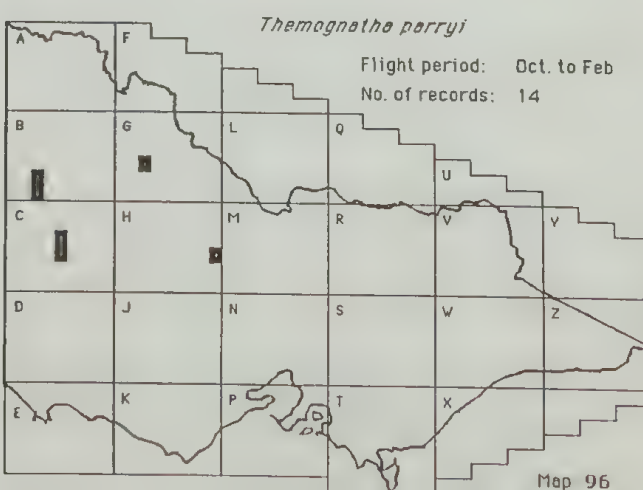
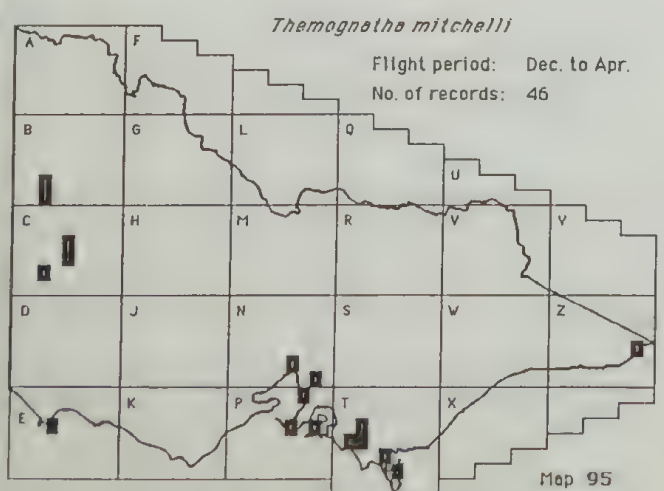
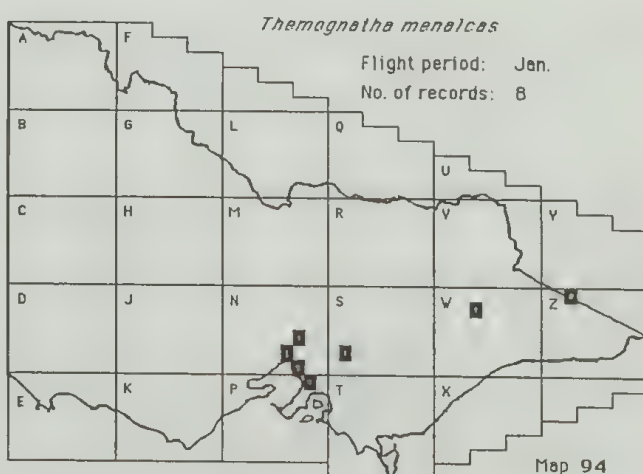
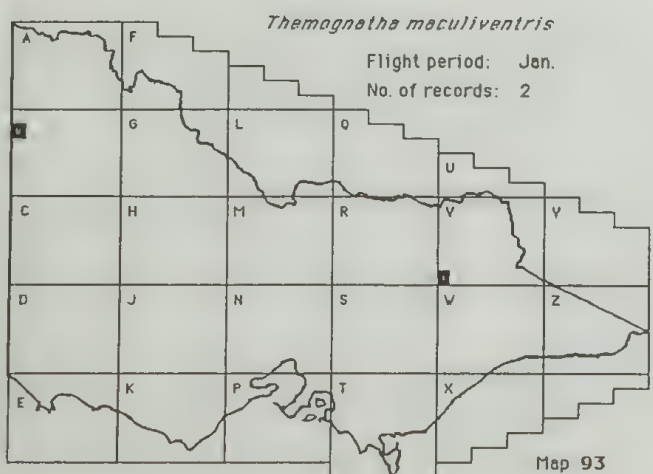
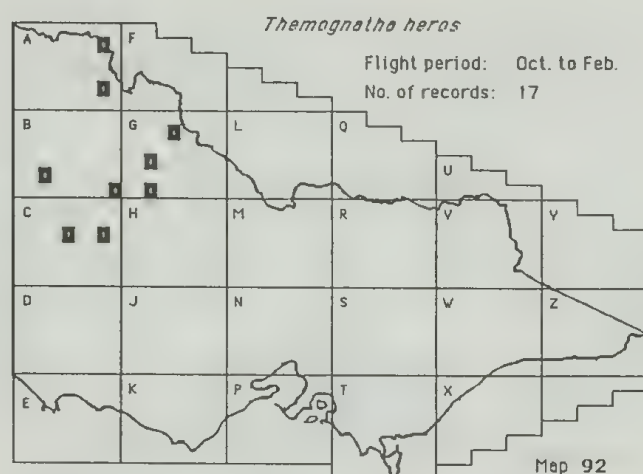
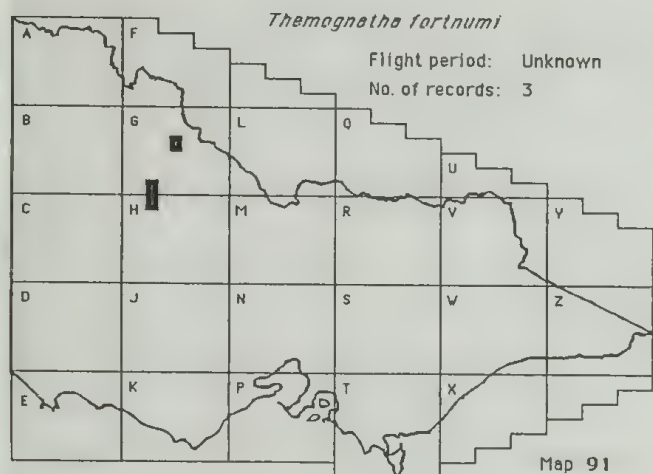
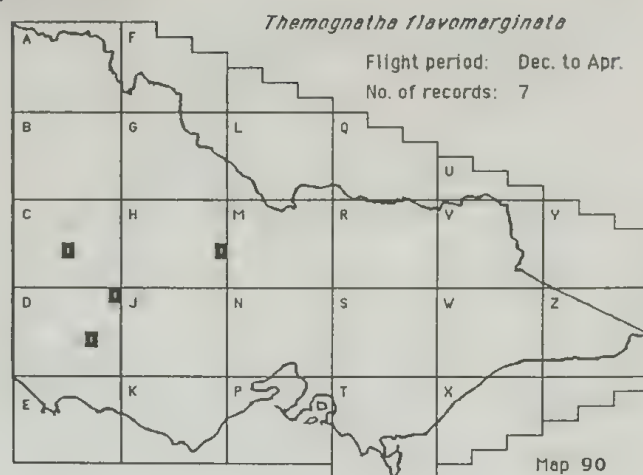
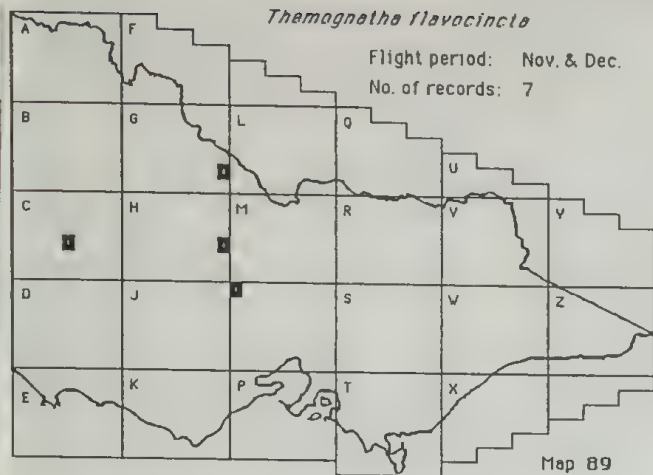






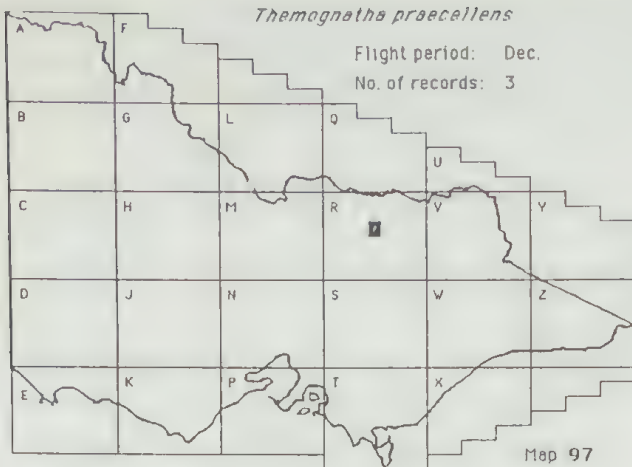






*Themognatha praecegens*

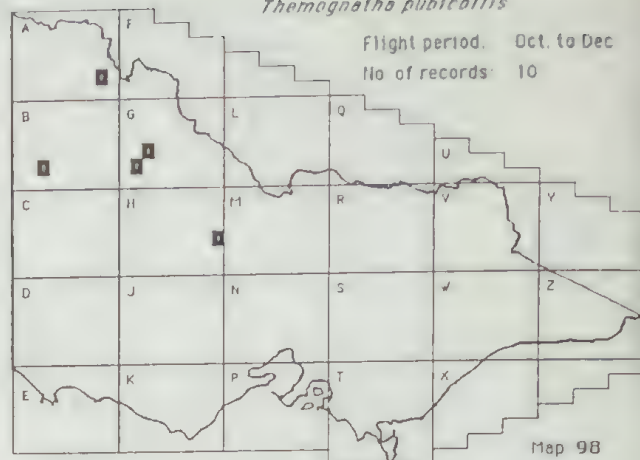
Flight period: Dec.  
No. of records: 3



Map 97

*Themognatha pubicollis*

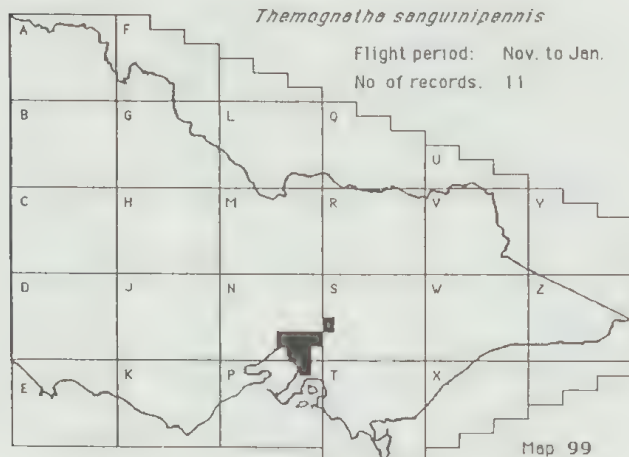
Flight period: Oct. to Dec.  
No. of records: 10



Map 98

*Themognatha sanguinipennis*

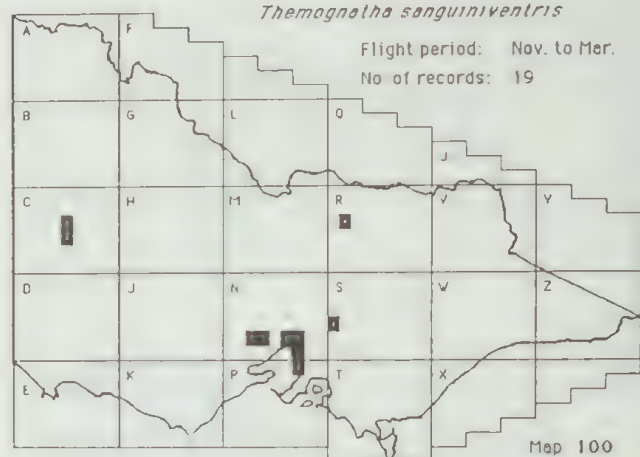
Flight period: Nov. to Jan.  
No. of records: 11



Map 99

*Themognatha sanguiventris*

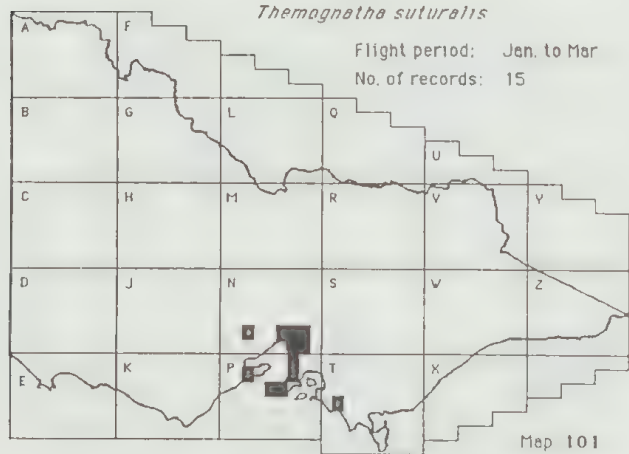
Flight period: Nov. to Mar.  
No. of records: 19



Map 100

*Themognatha suturalis*

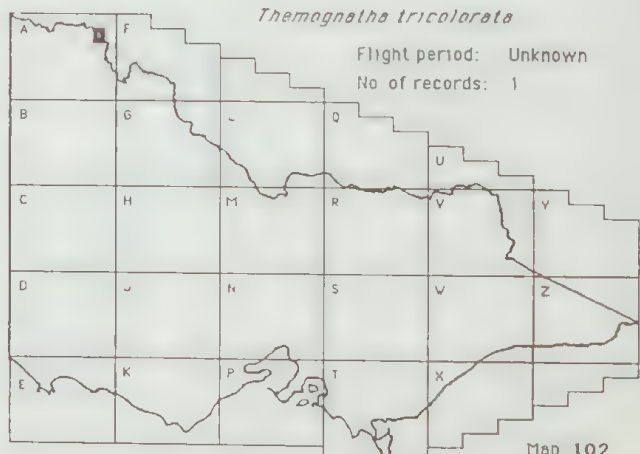
Flight period: Jan. to Mar.  
No. of records: 15



Map 101

*Themognatha tricolorata*

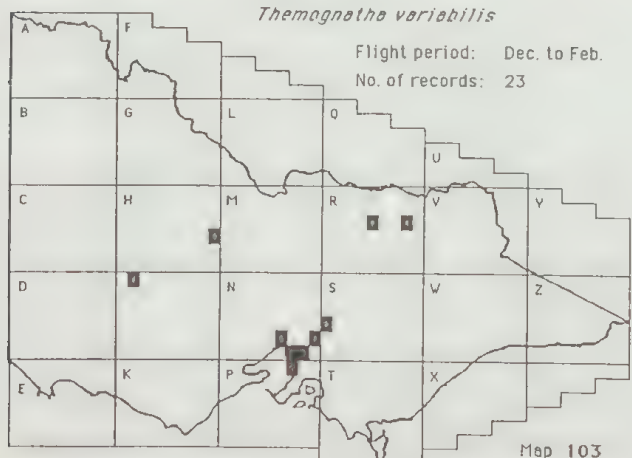
Flight period: Unknown  
No. of records: 1



Map 102

*Themognatha variabilis*

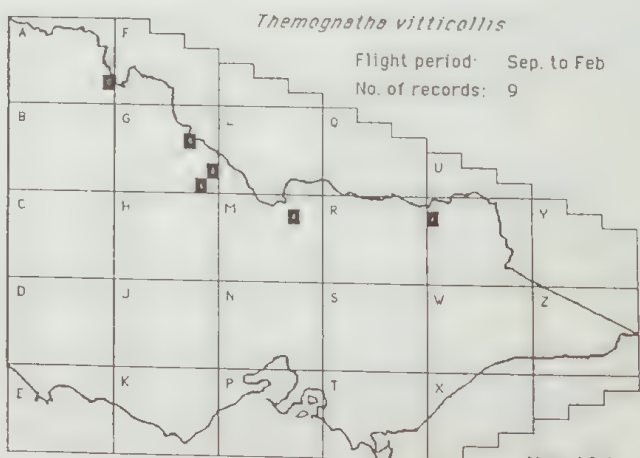
Flight period: Dec. to Feb.  
No. of records: 23



Map 103

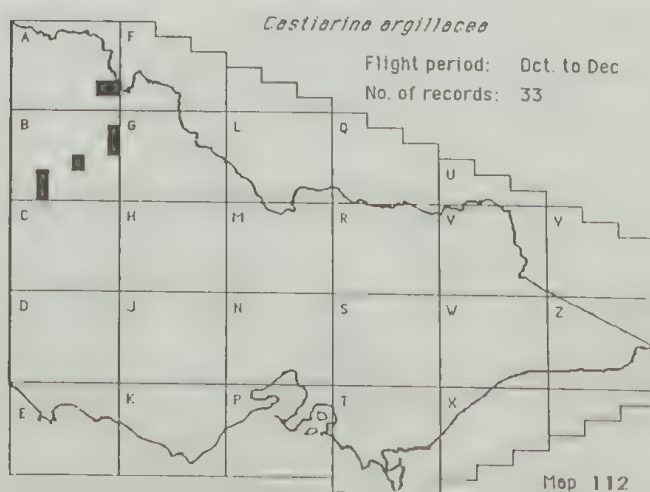
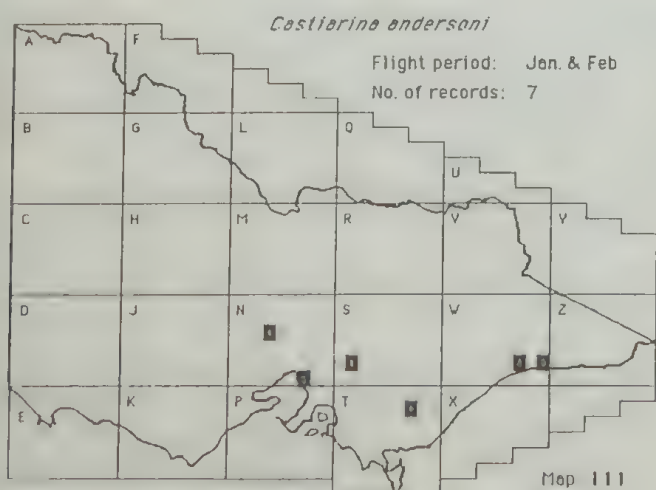
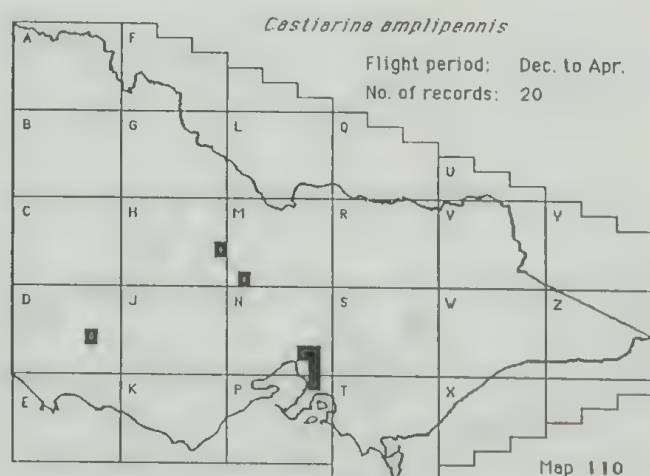
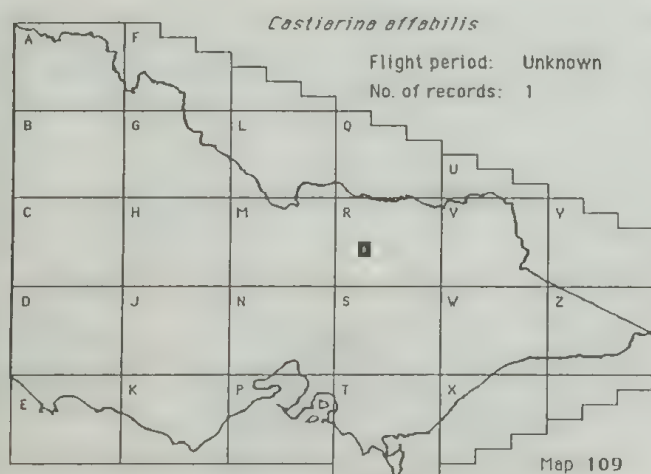
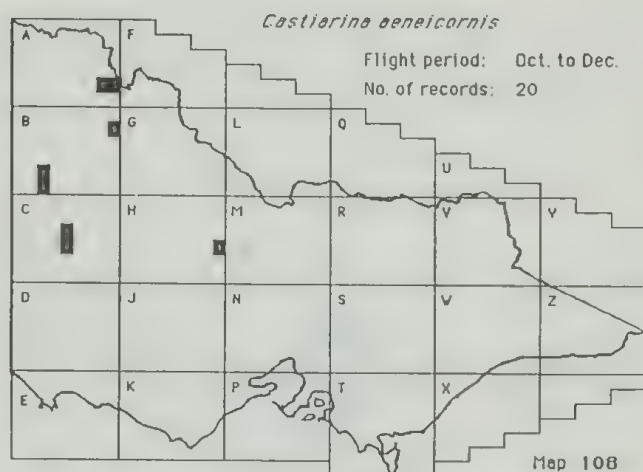
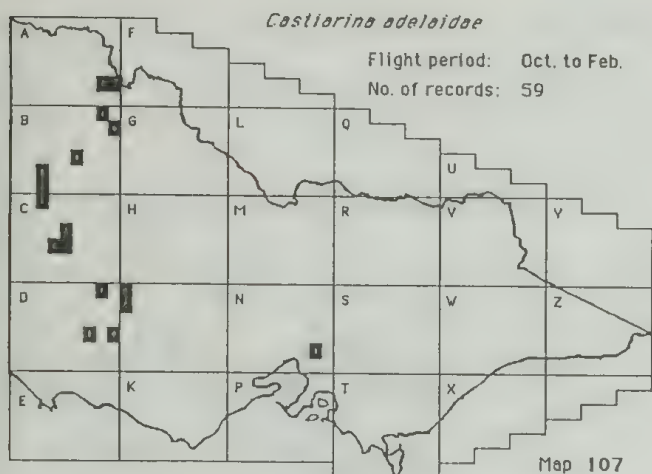
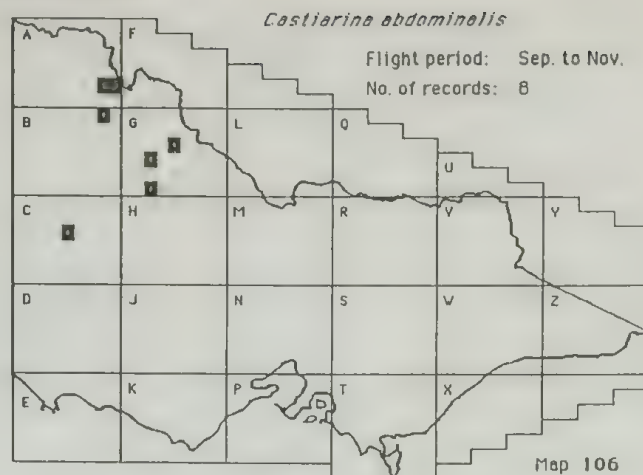
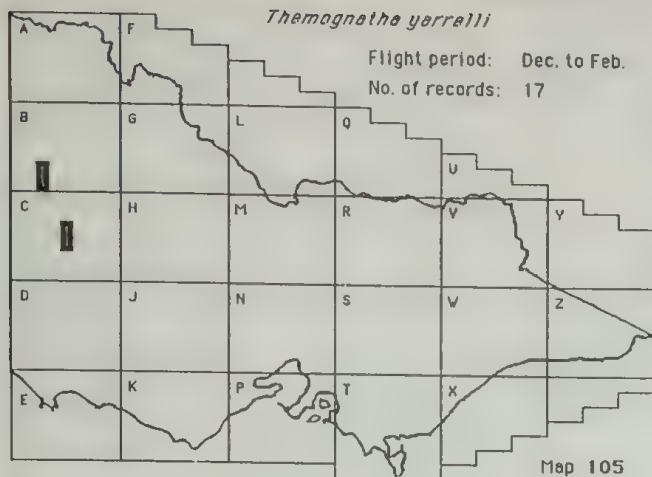
*Themognatha vitticollis*

Flight period: Sep. to Feb.  
No. of records: 9



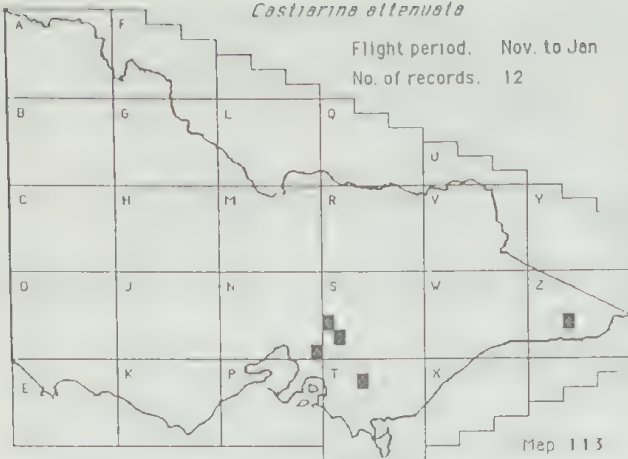
Map 104





*Castiarina attenuata*

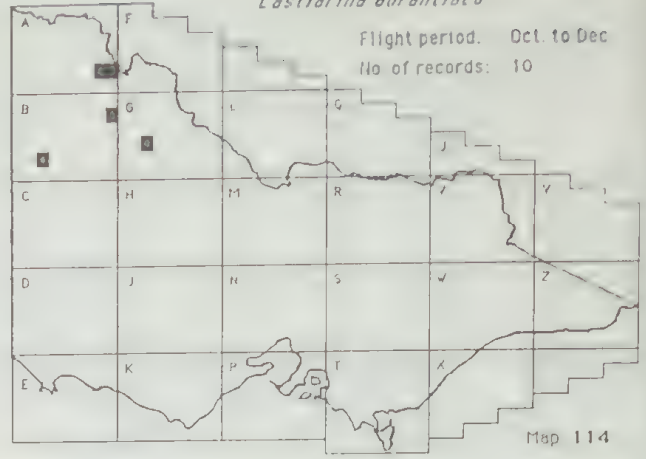
Flight period: Nov. to Jan  
No. of records: 12



Map 113

*Castiarina aurantiaca*

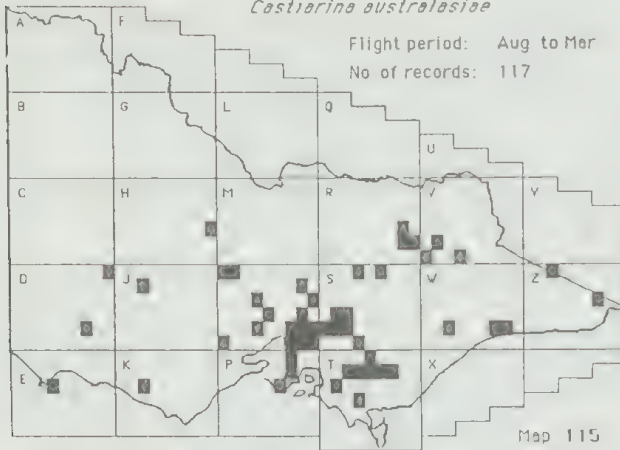
Flight period: Oct. to Dec  
No. of records: 10



Map 114

*Castiarina australasica*

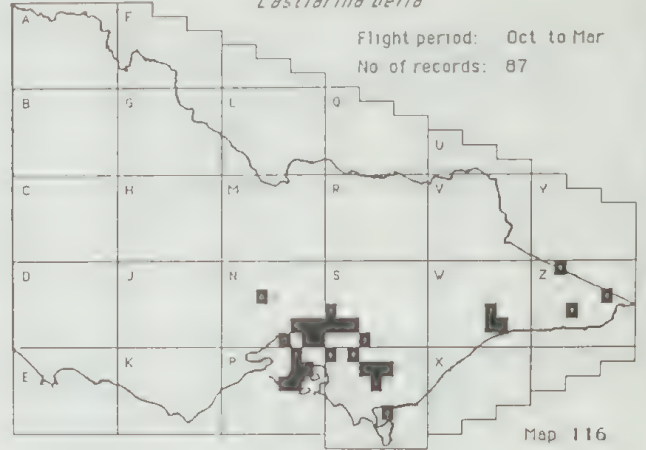
Flight period: Aug to Mar  
No. of records: 117



Map 115

*Castiarina bella*

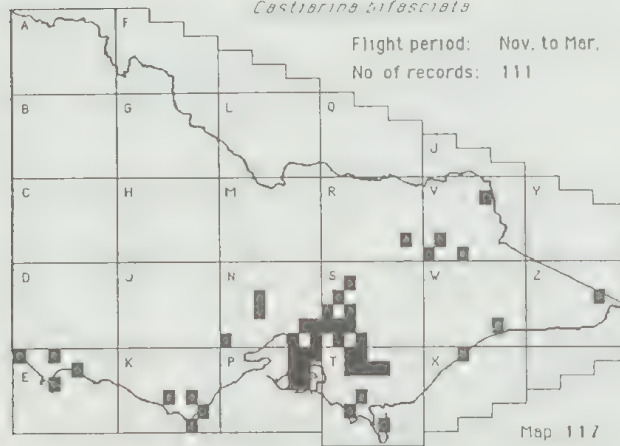
Flight period: Oct to Mar  
No. of records: 87



Map 116

*Castiarina bifasciata*

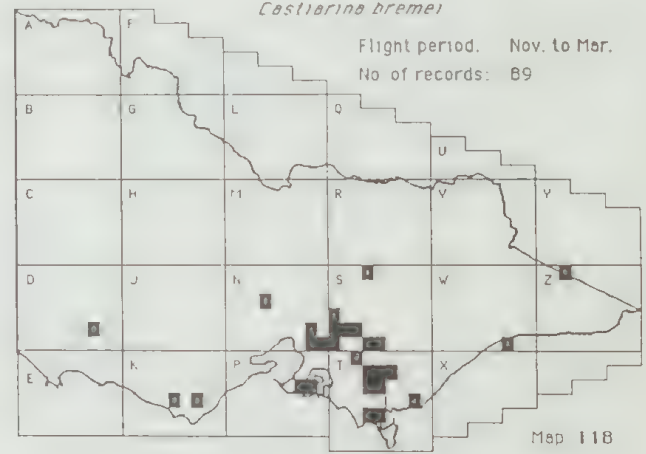
Flight period: Nov. to Mar.  
No. of records: 111



Map 117

*Castiarina bremeri*

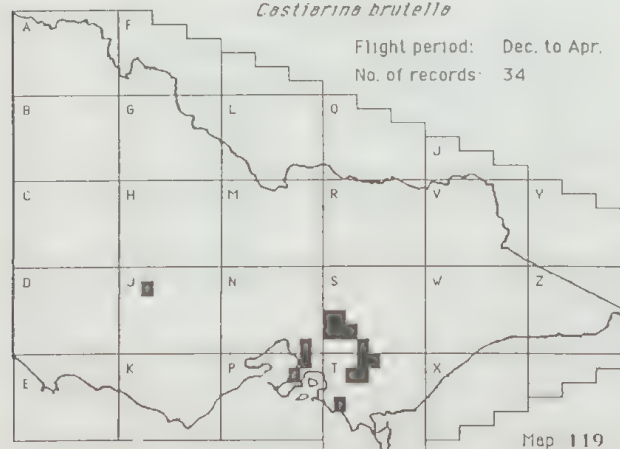
Flight period: Nov. to Mar.  
No. of records: 89



Map 118

*Castiarina brutella*

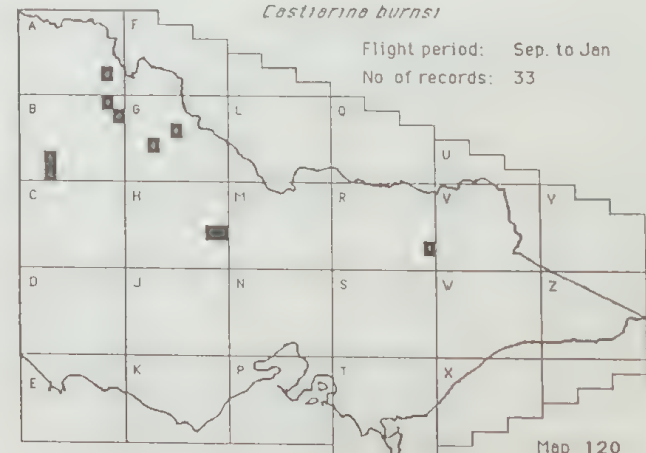
Flight period: Dec. to Apr.  
No. of records: 34



Map 119

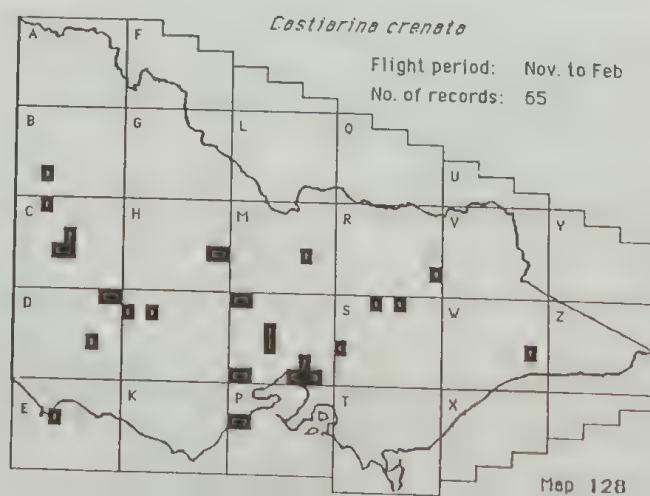
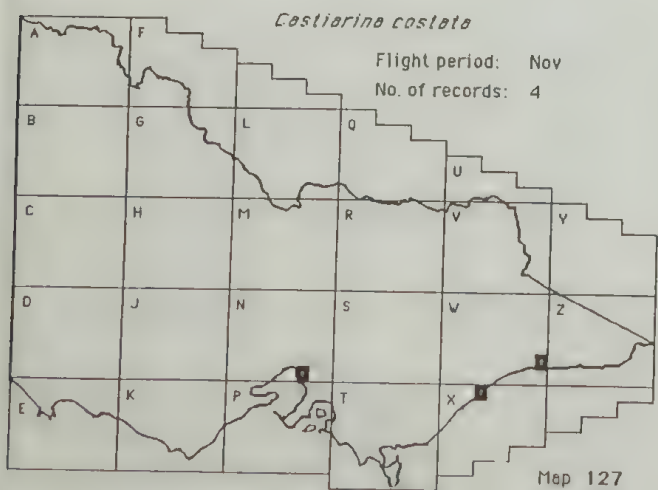
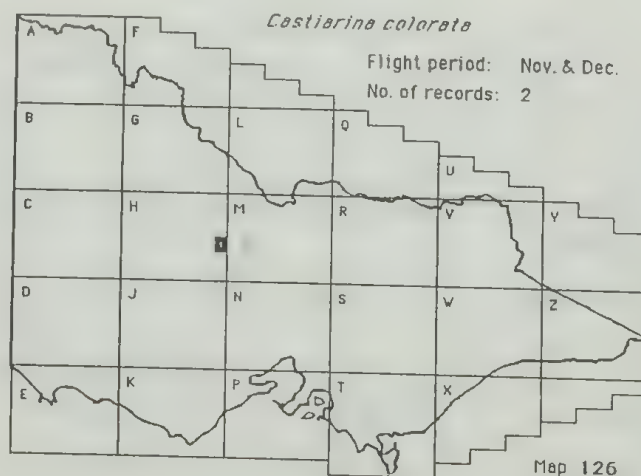
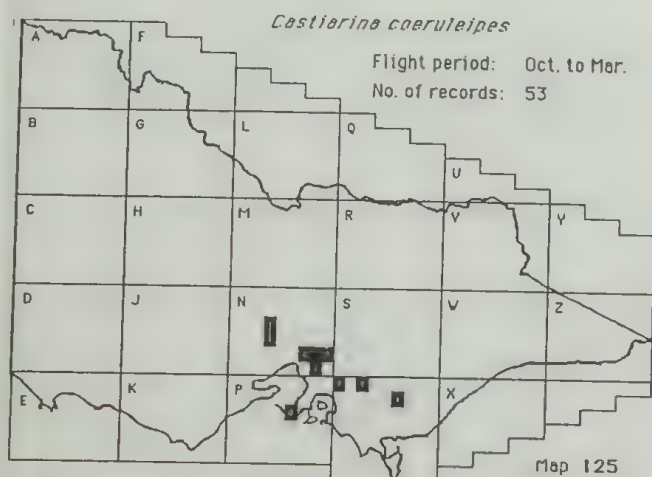
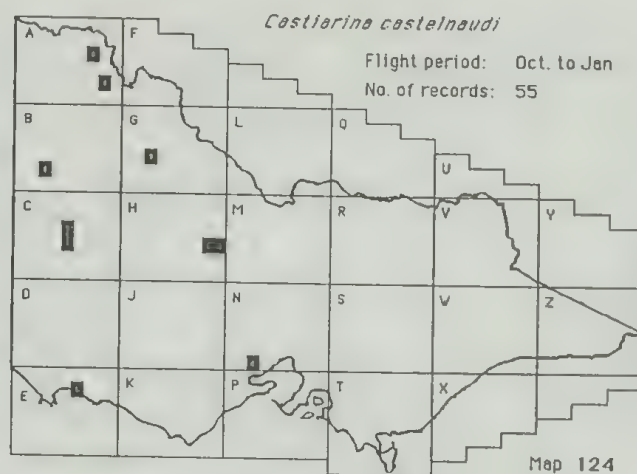
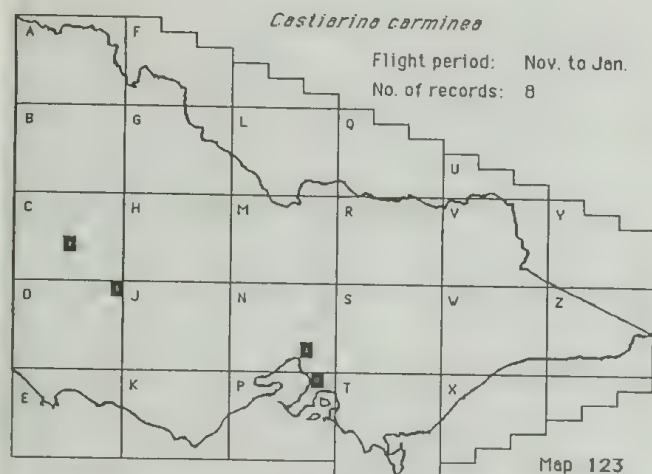
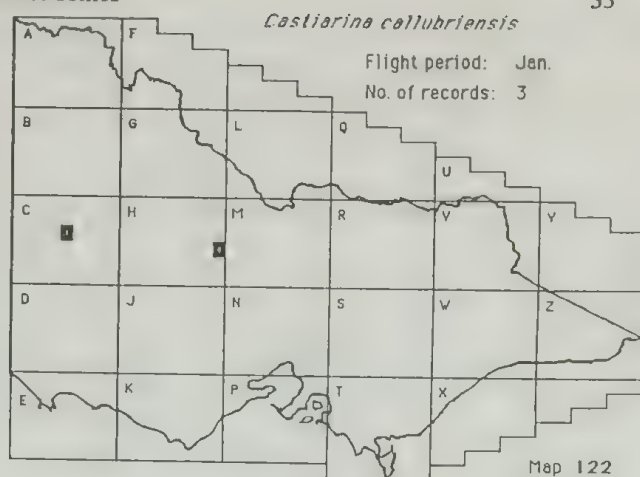
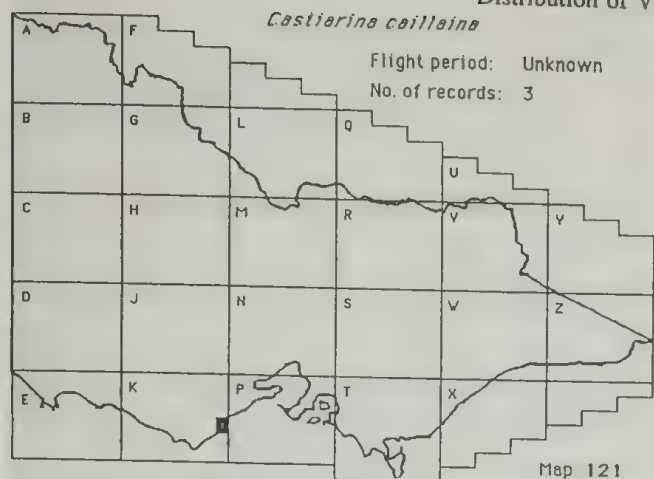
*Castiarina burnsi*

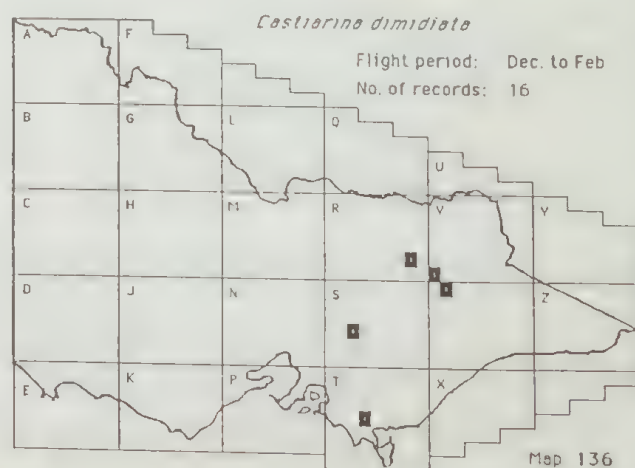
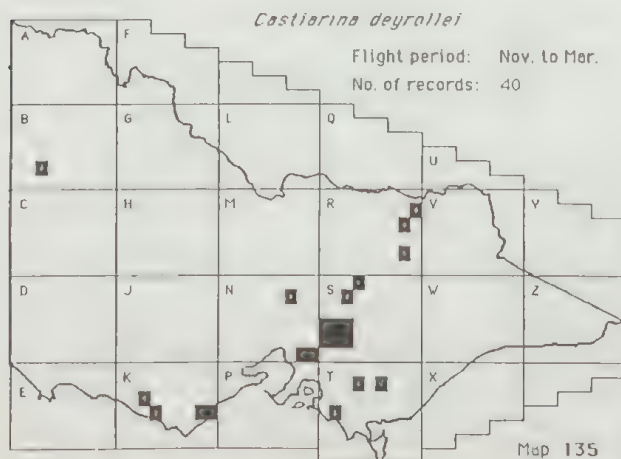
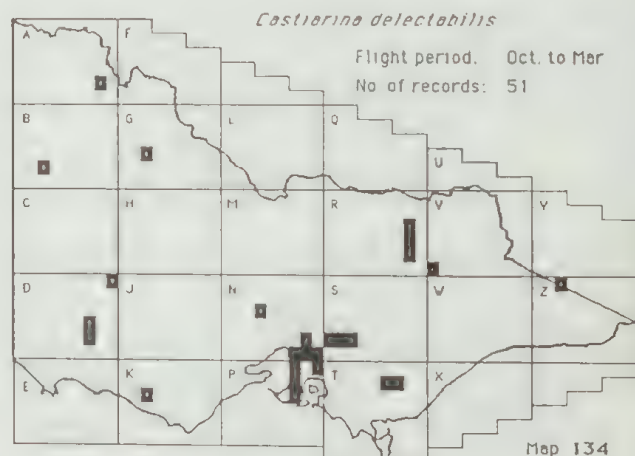
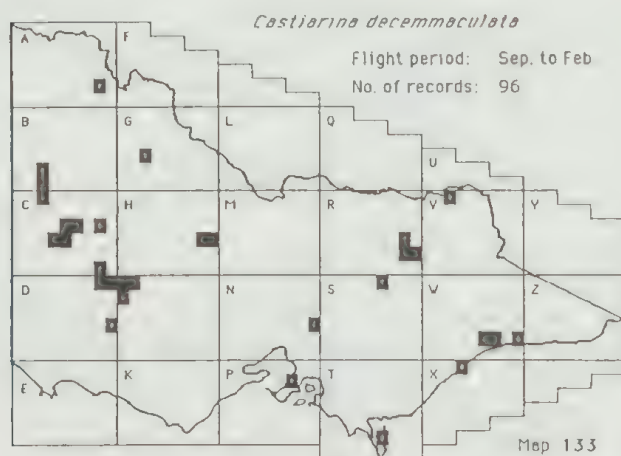
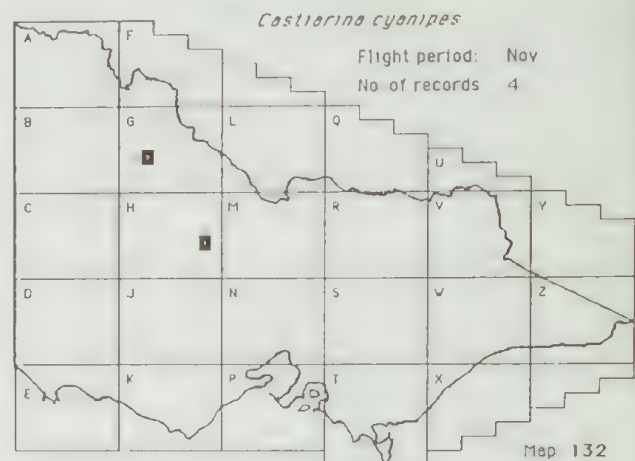
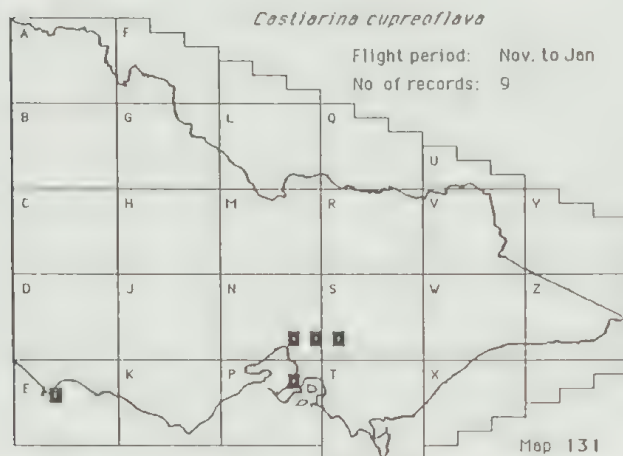
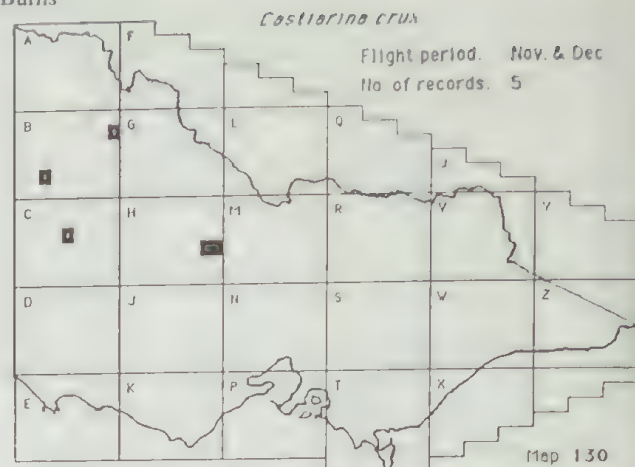
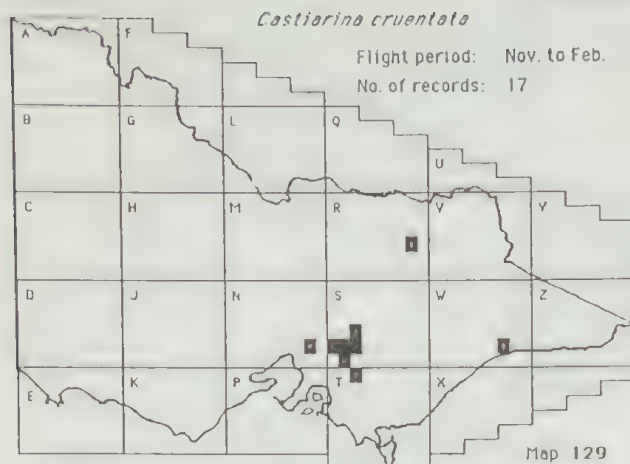
Flight period: Sep. to Jan  
No. of records: 33



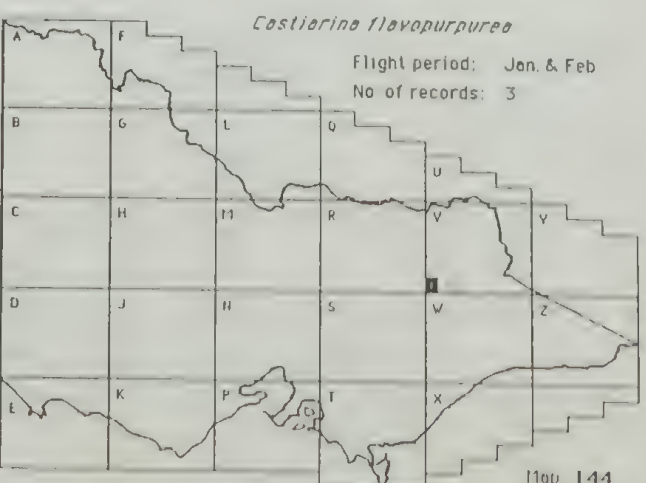
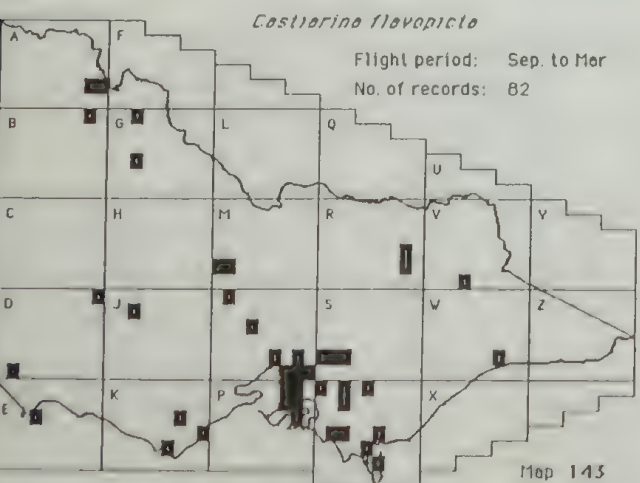
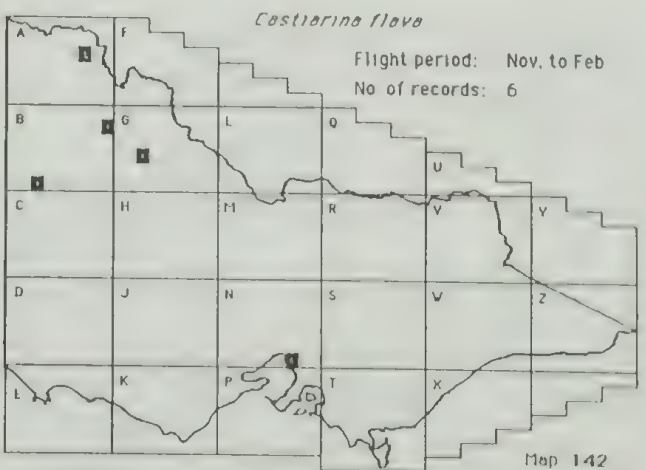
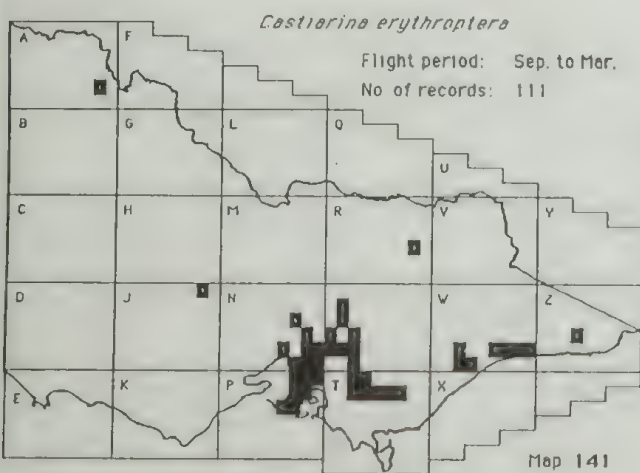
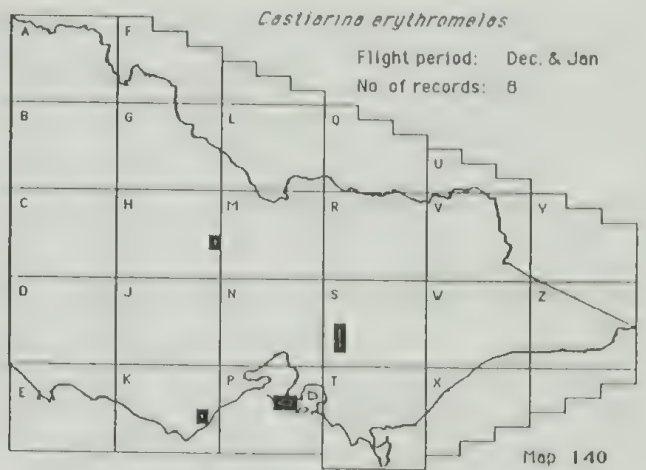
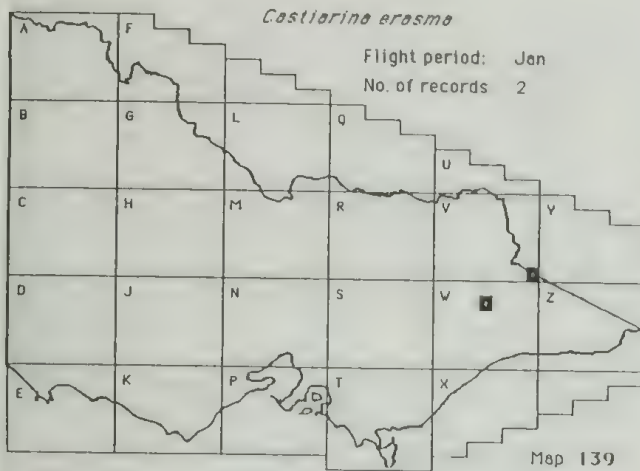
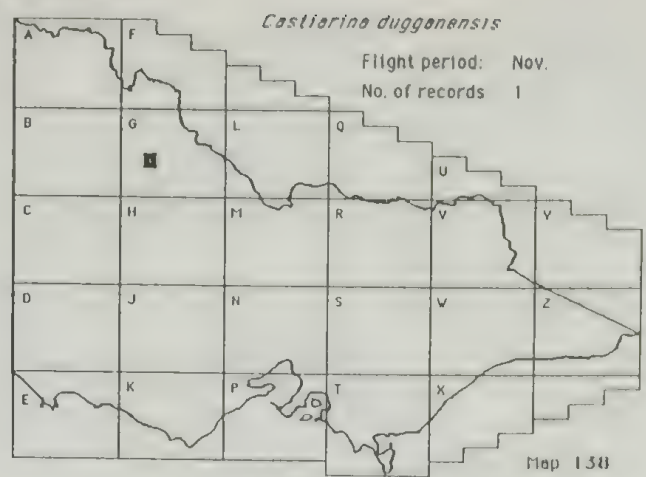
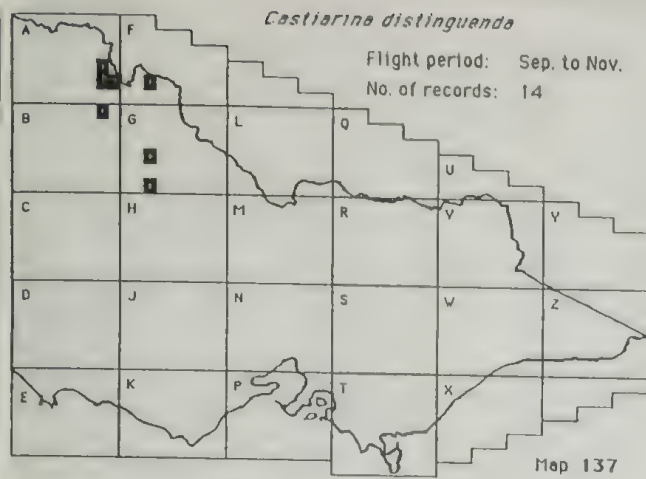
Map 120

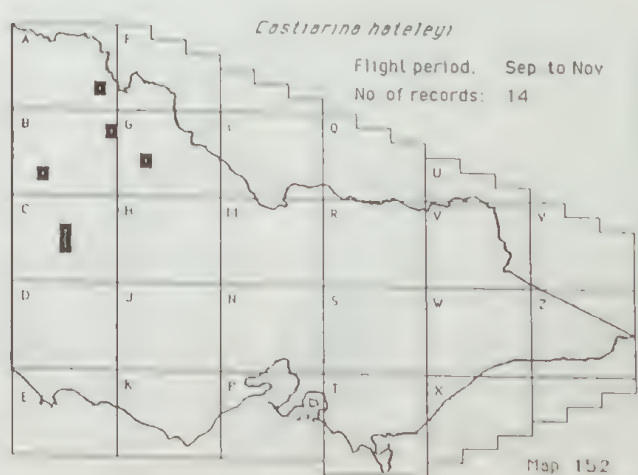
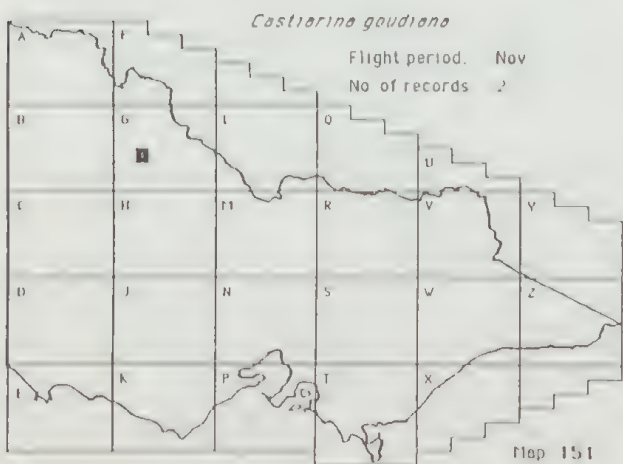
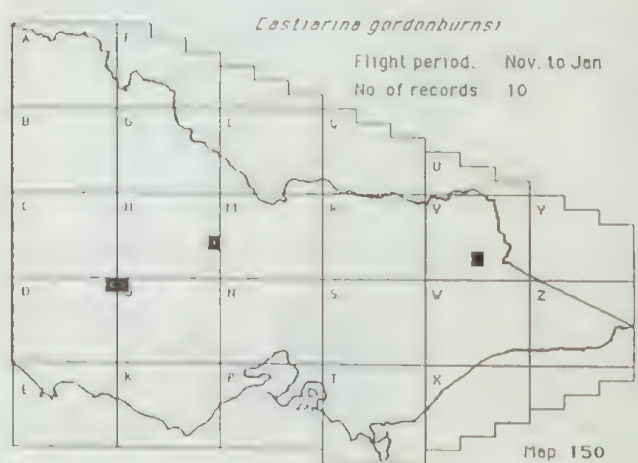
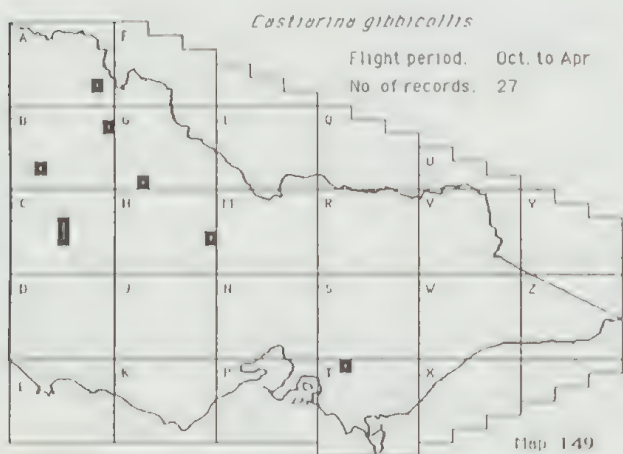
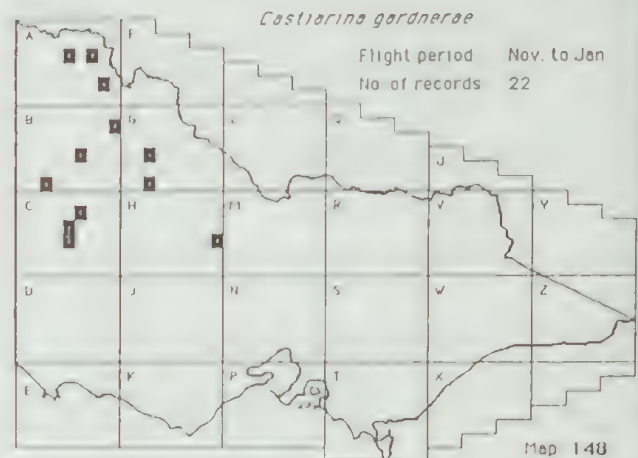
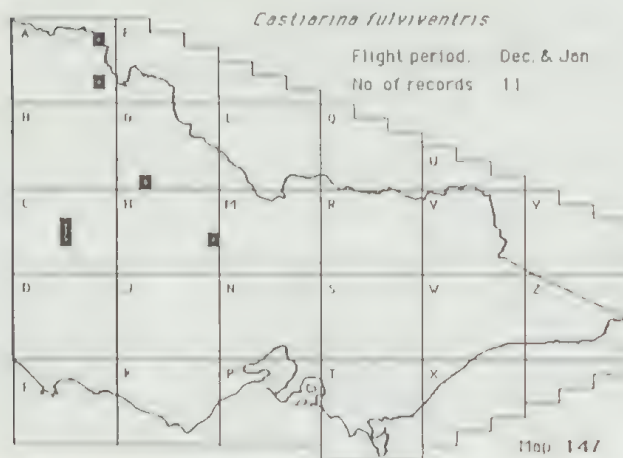
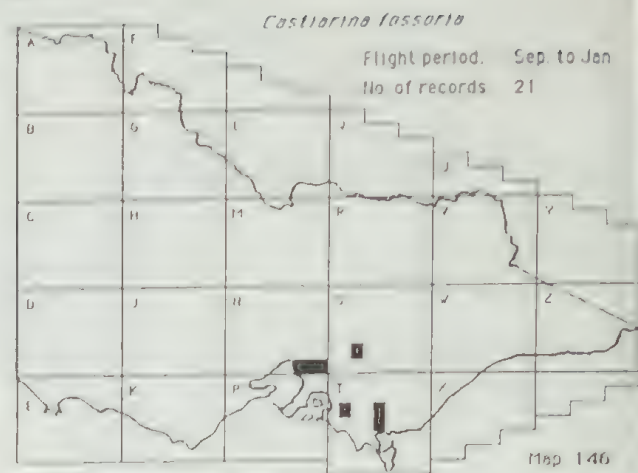




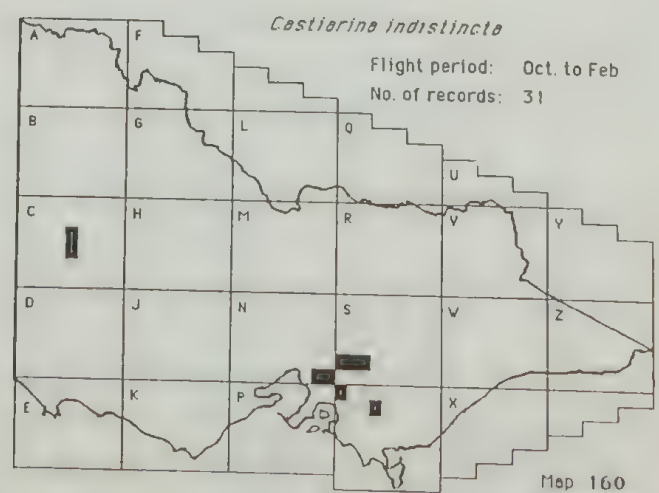
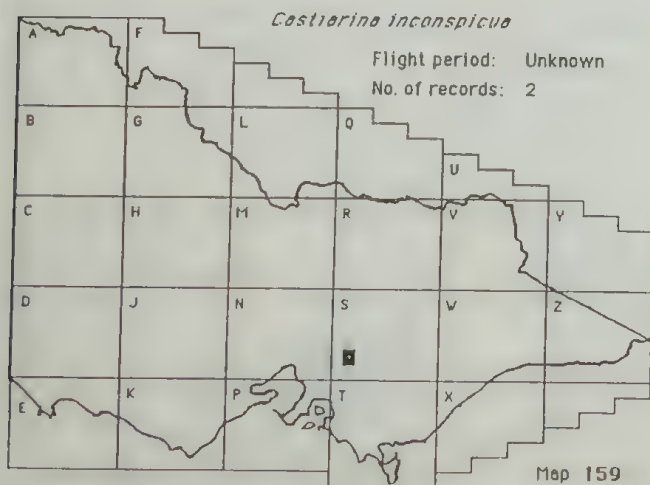
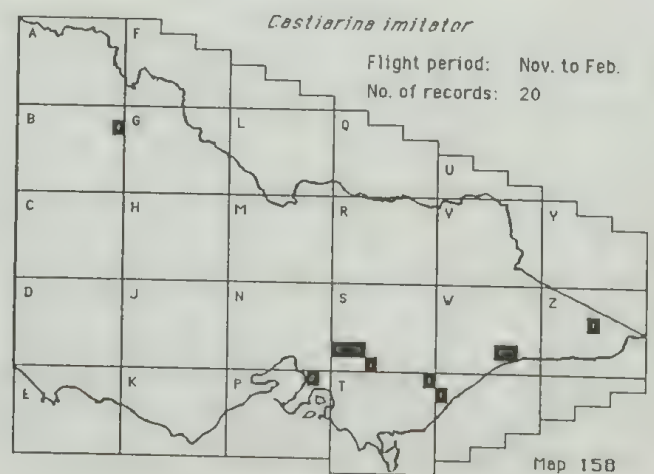
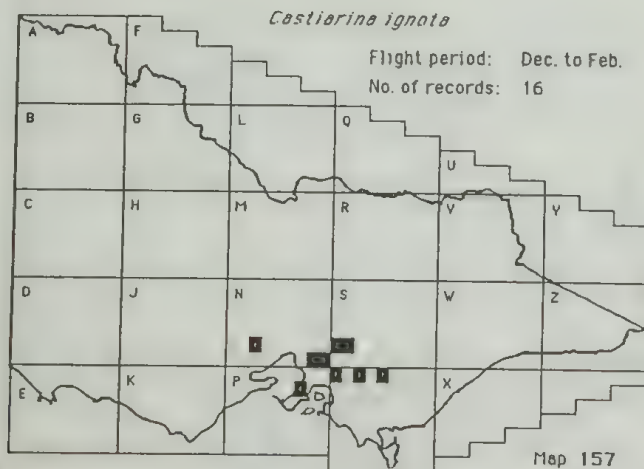
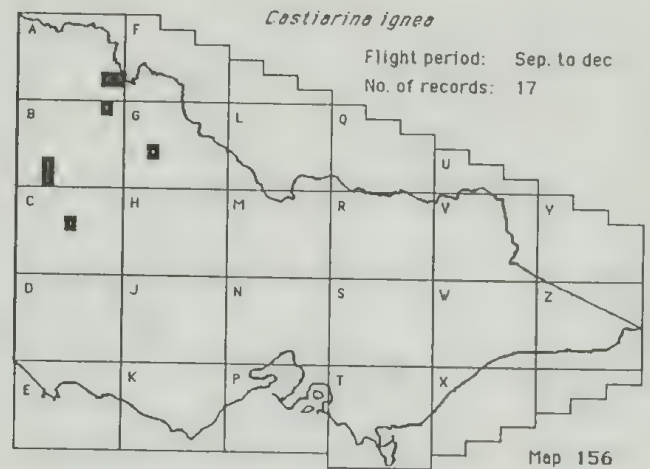
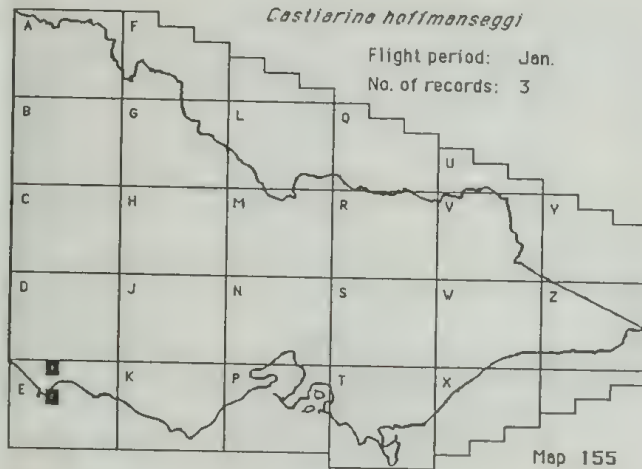
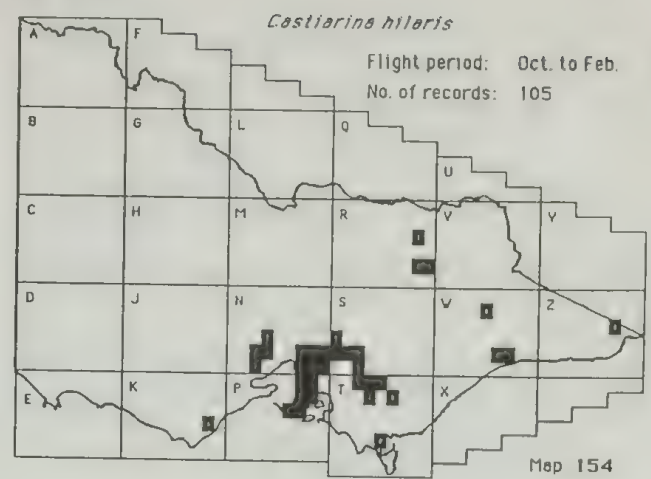
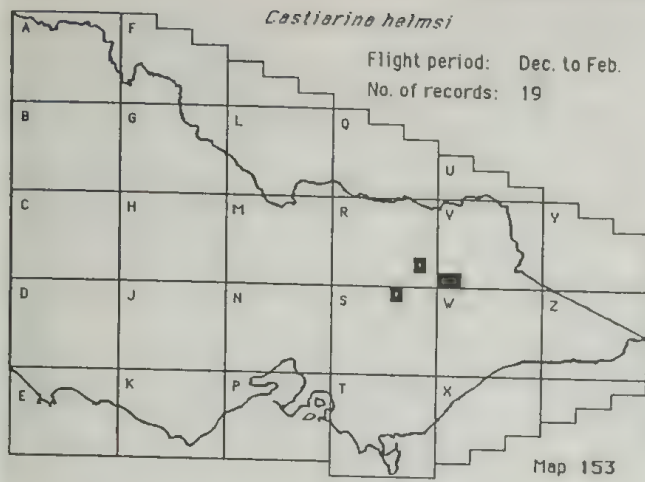


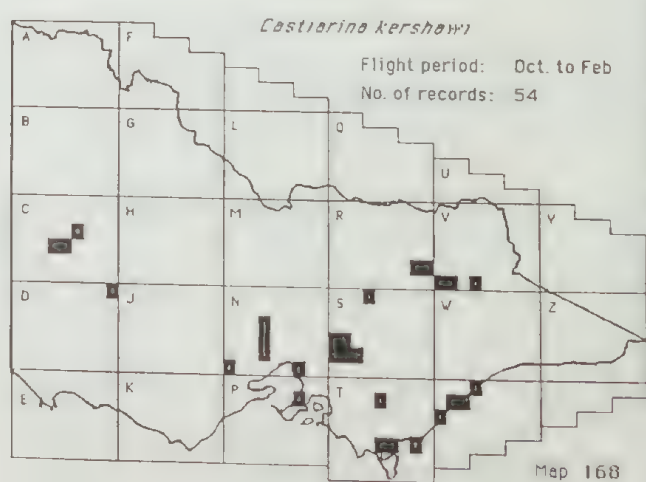
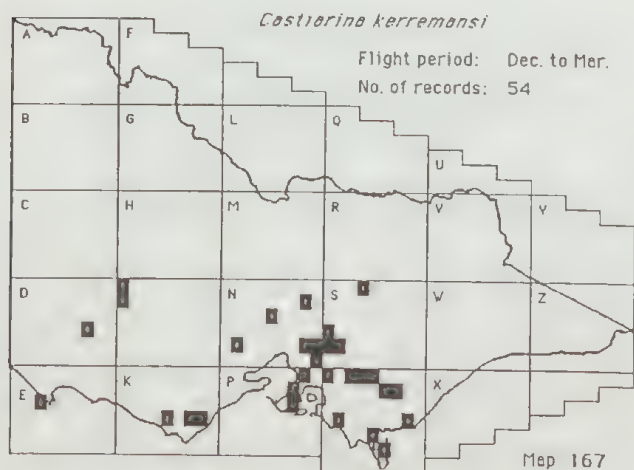
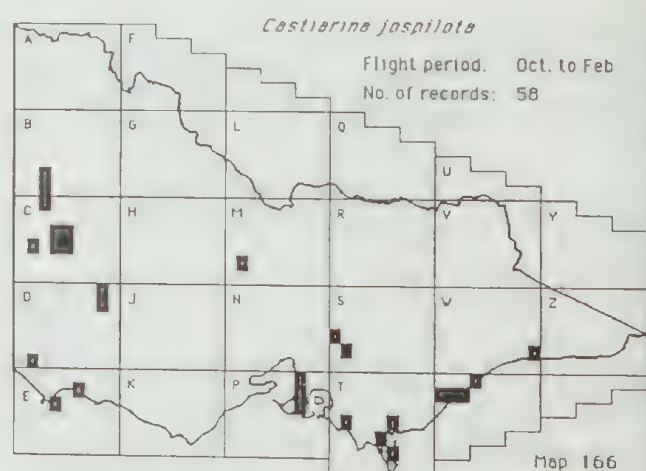
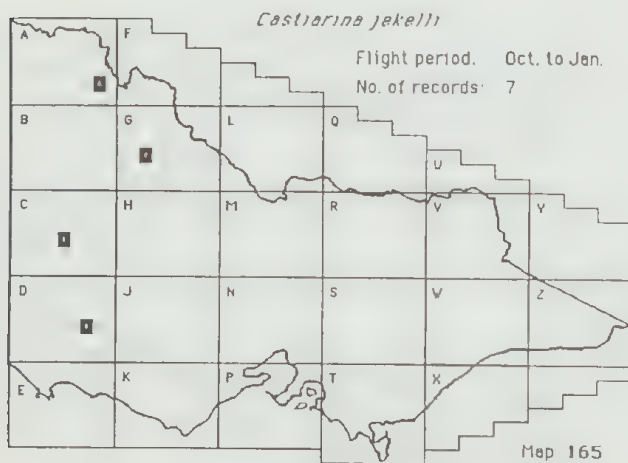
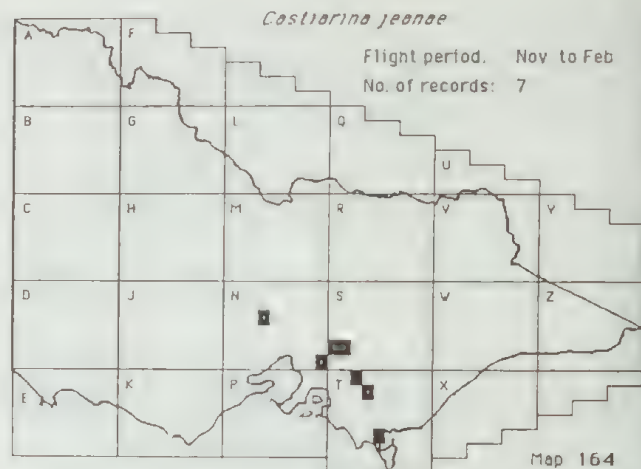
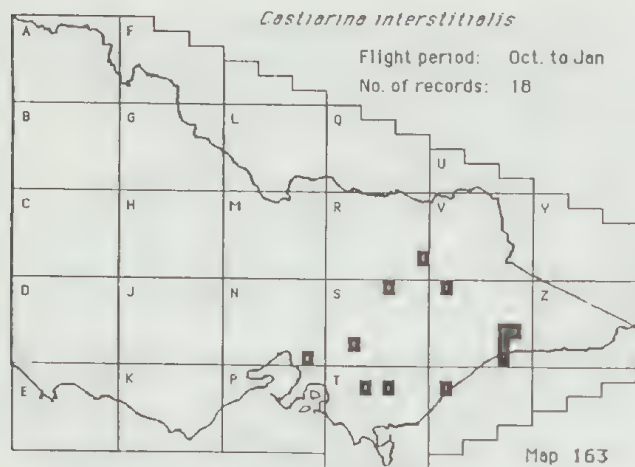
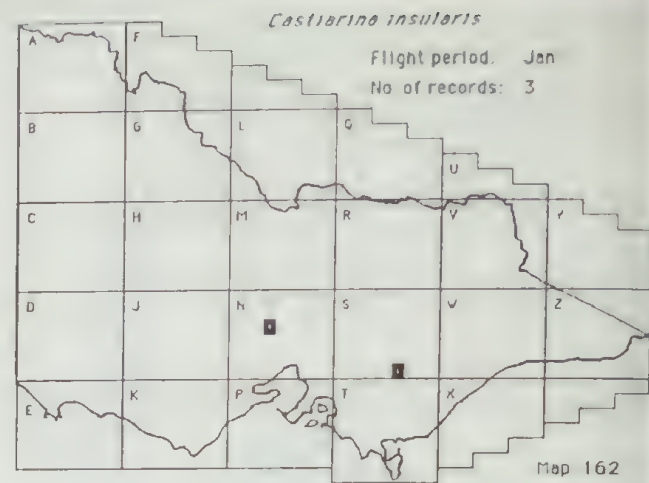
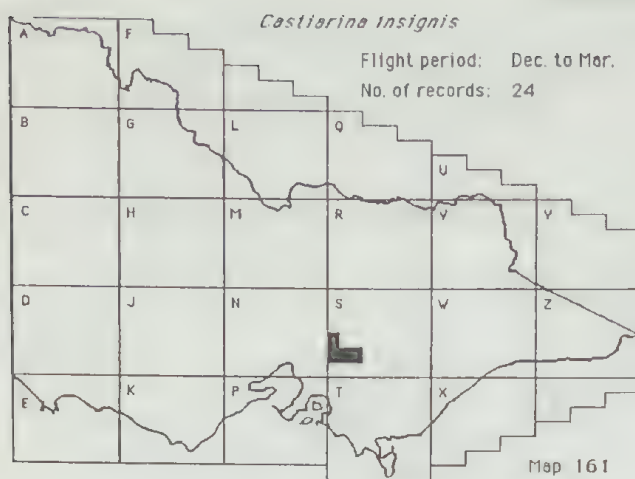




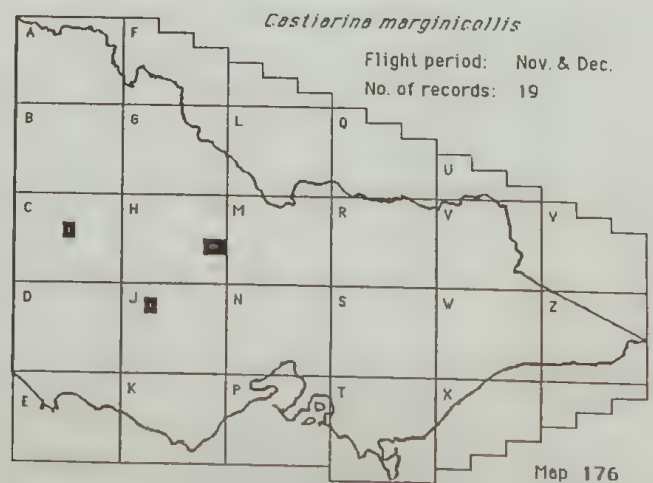
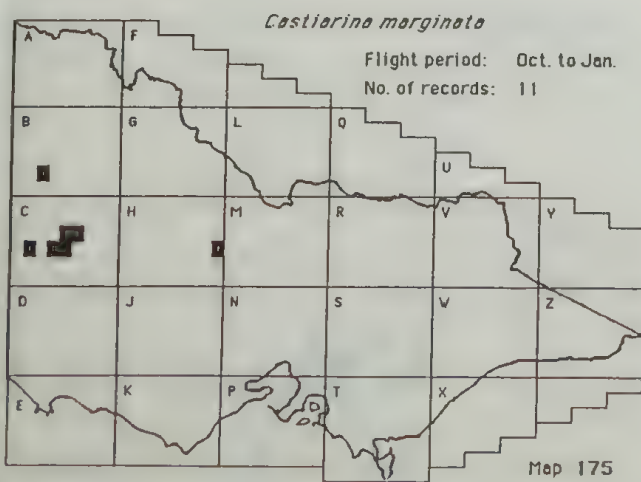
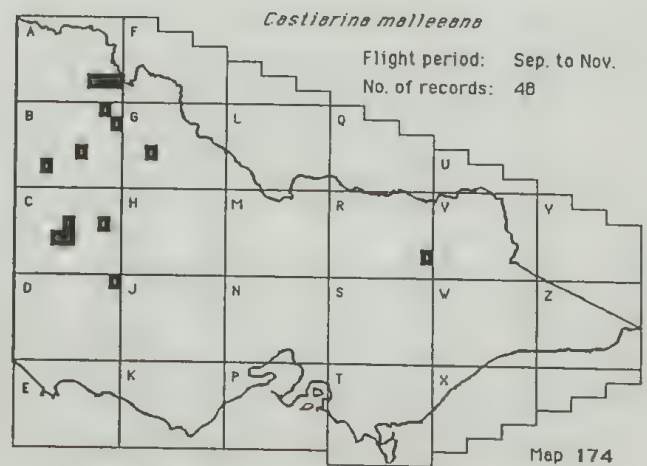
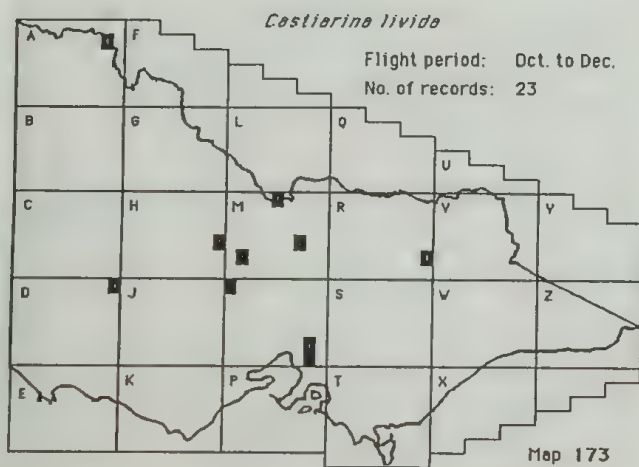
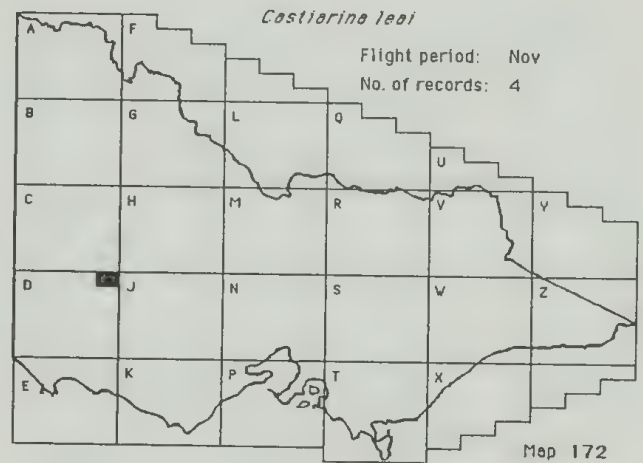
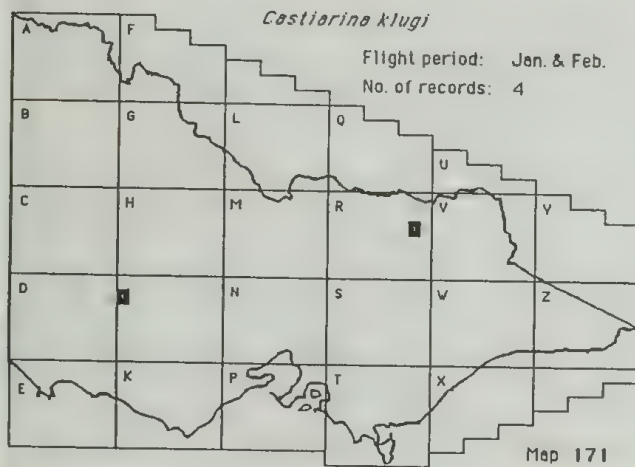
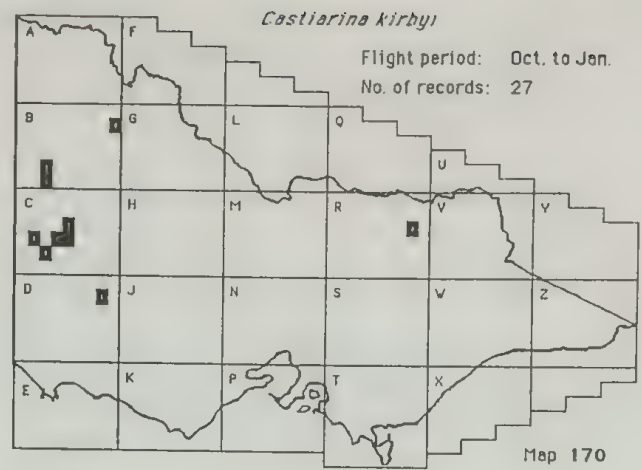
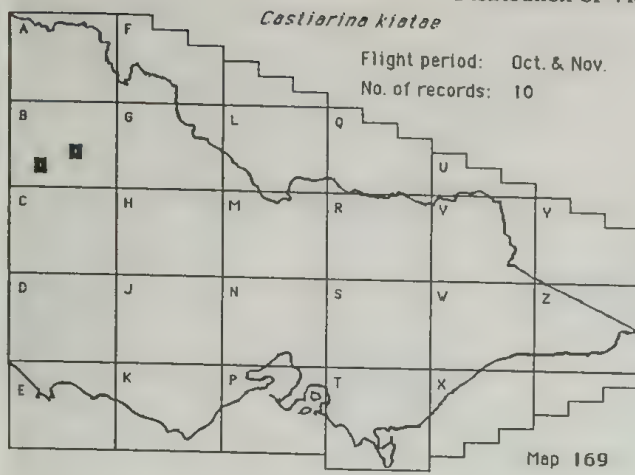


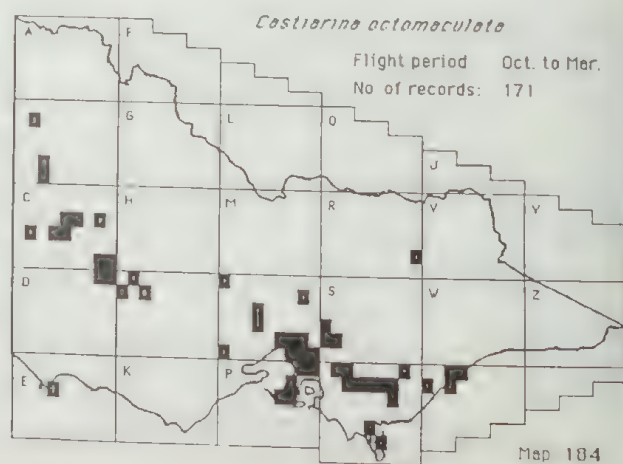
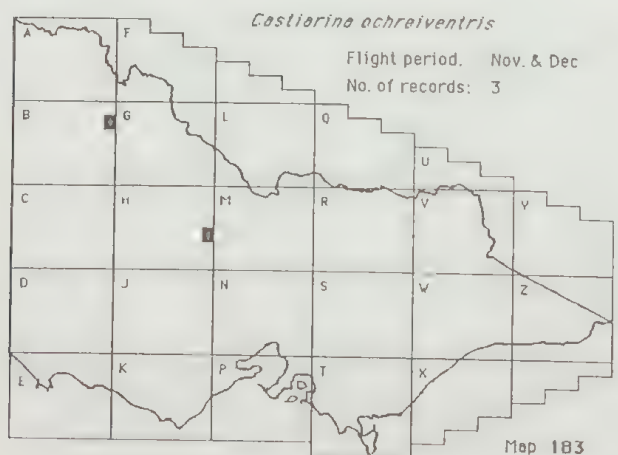
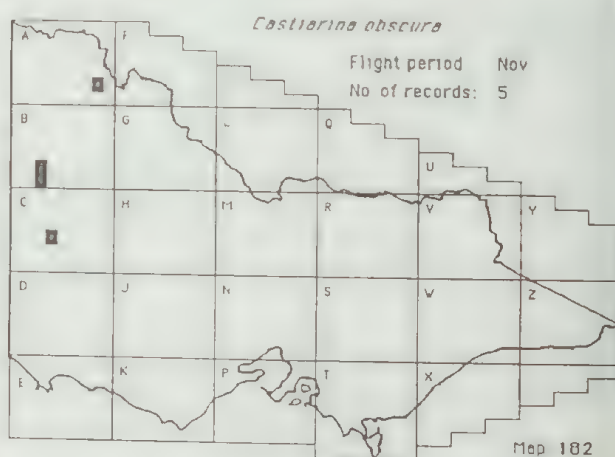
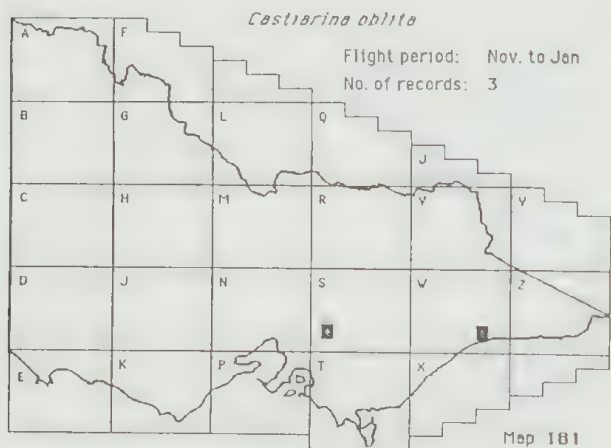
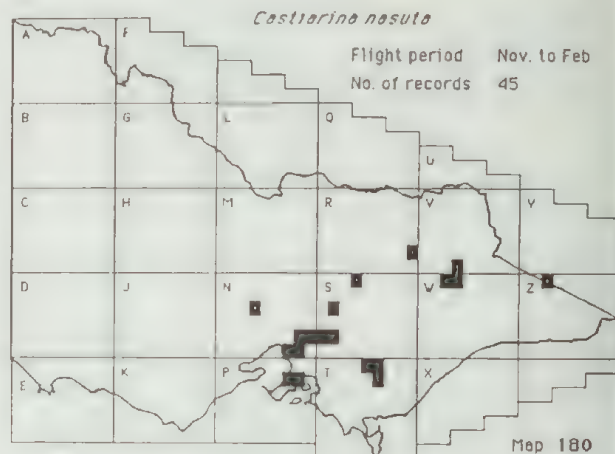
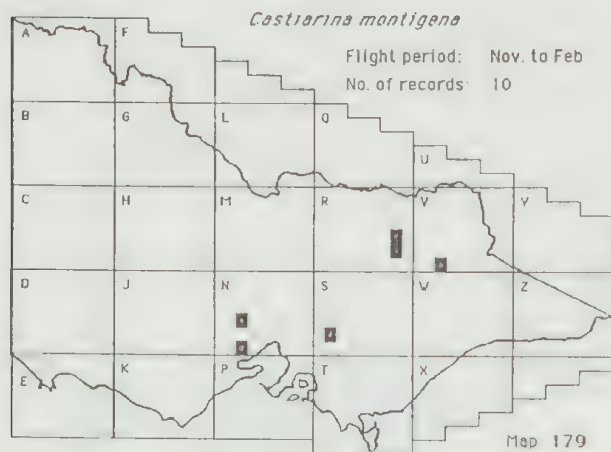
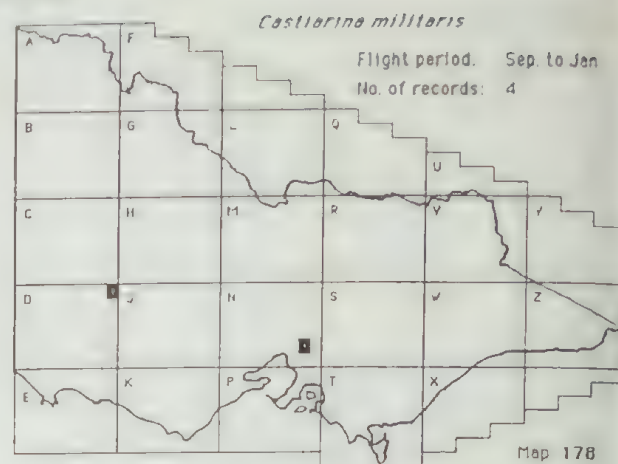
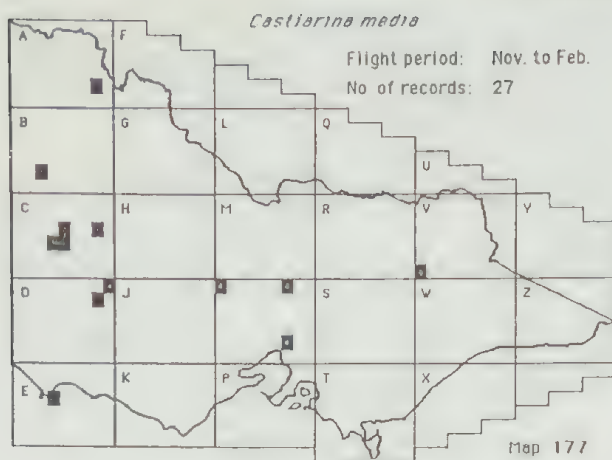








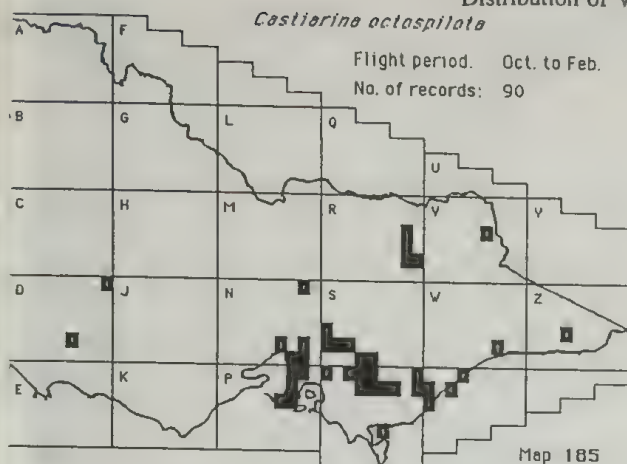






*Castiarina octaspilata*

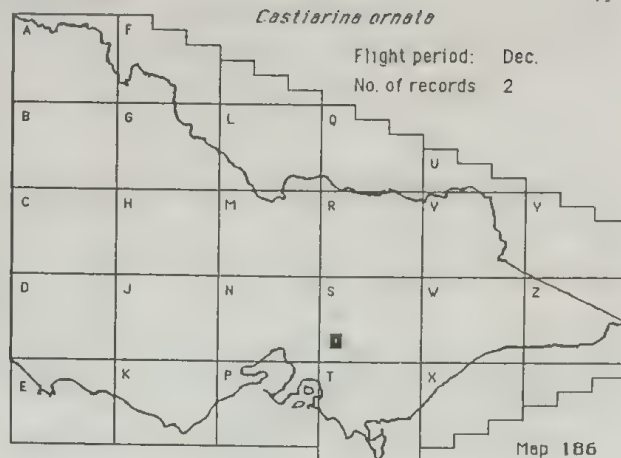
Flight period: Oct. to Feb.  
No. of records: 90



Map 185

*Castiarina ornata*

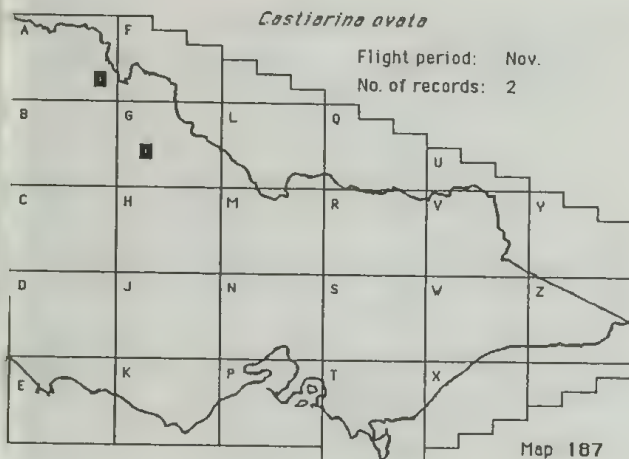
Flight period: Dec.  
No. of records: 2



Map 186

*Castiarina ovata*

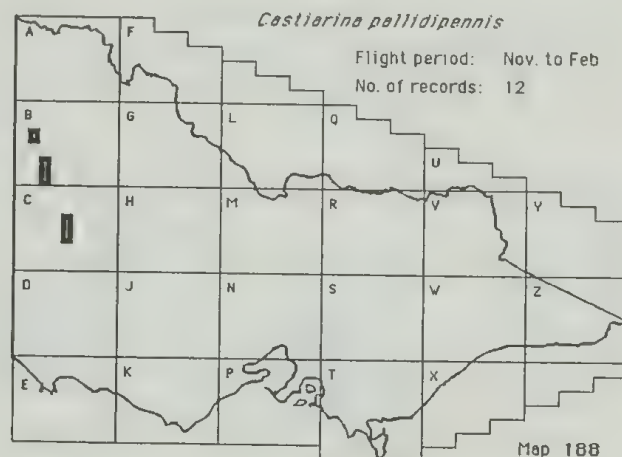
Flight period: Nov.  
No. of records: 2



Map 187

*Castiarina pallidipennis*

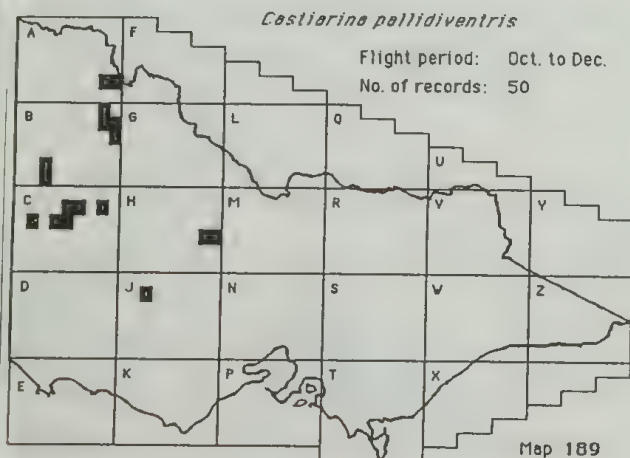
Flight period: Nov. to Feb.  
No. of records: 12



Map 188

*Castiarina pallidiventris*

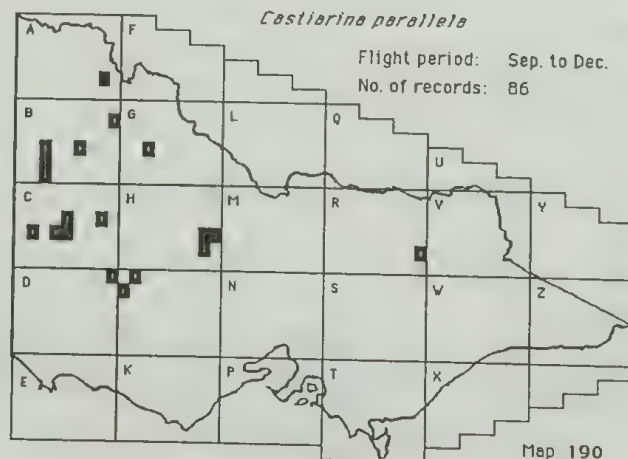
Flight period: Oct. to Dec.  
No. of records: 50



Map 189

*Castiarina parallela*

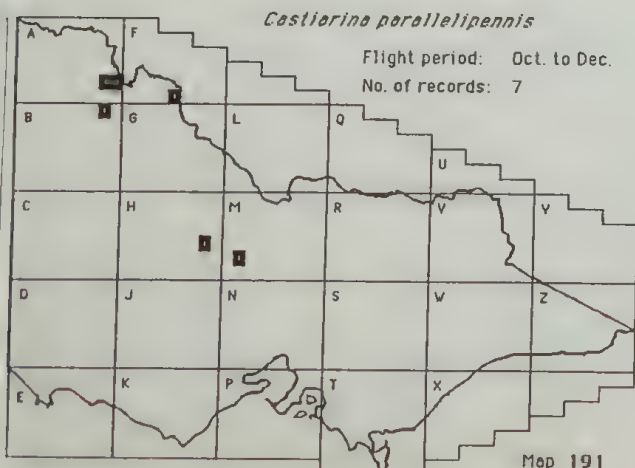
Flight period: Sep. to Dec.  
No. of records: 86



Map 190

*Castiarina parallelipennis*

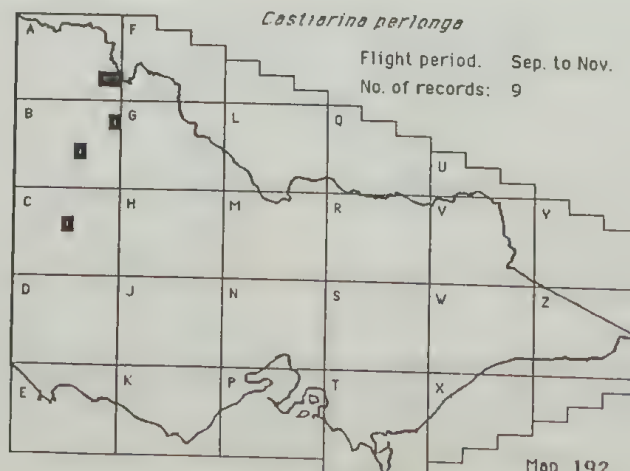
Flight period: Oct. to Dec.  
No. of records: 7



Map 191

*Castiarina perlonga*

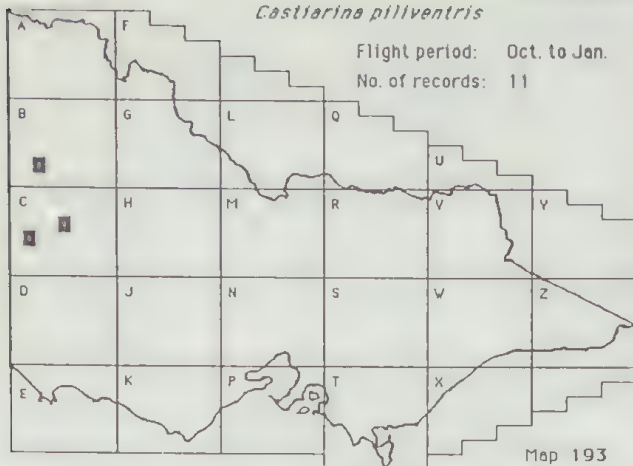
Flight period: Sep. to Nov.  
No. of records: 9



Map 192

*Castiarina pilliventris*

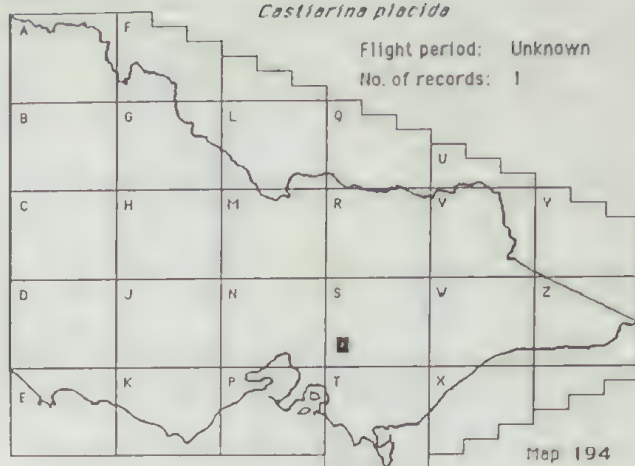
Flight period: Oct. to Jan.  
No. of records: 11



Map 193

*Castiarina placida*

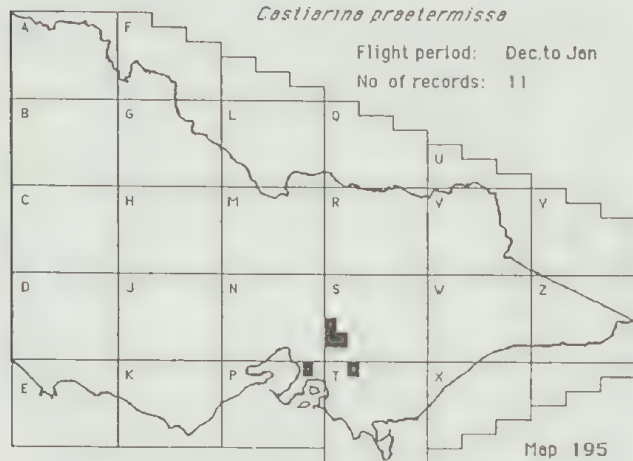
Flight period: Unknown  
No. of records: 1



Map 194

*Castiarina praetermissa*

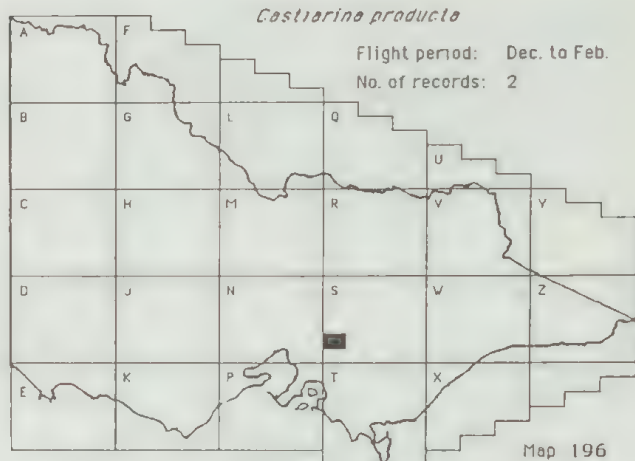
Flight period: Dec. to Jan.  
No. of records: 11



Map 195

*Castiarina producta*

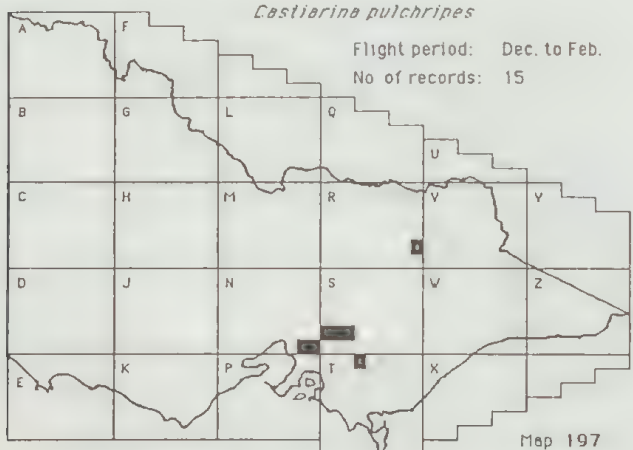
Flight period: Dec. to Feb.  
No. of records: 2



Map 196

*Castiarina pulchripes*

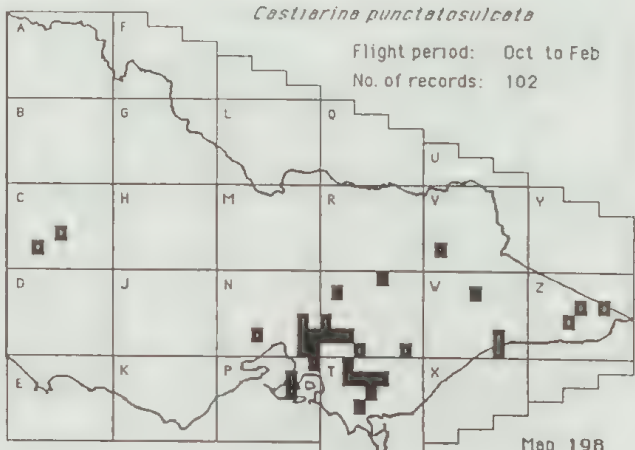
Flight period: Dec. to Feb.  
No. of records: 15



Map 197

*Castiarina punctatosulcata*

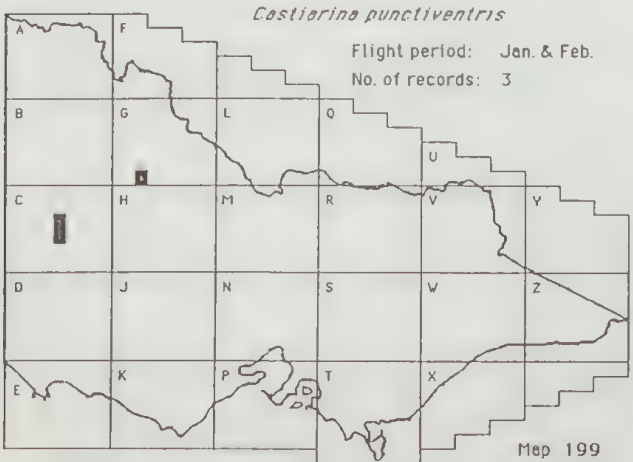
Flight period: Oct. to Feb.  
No. of records: 102



Map 198

*Castiarina punctiventris*

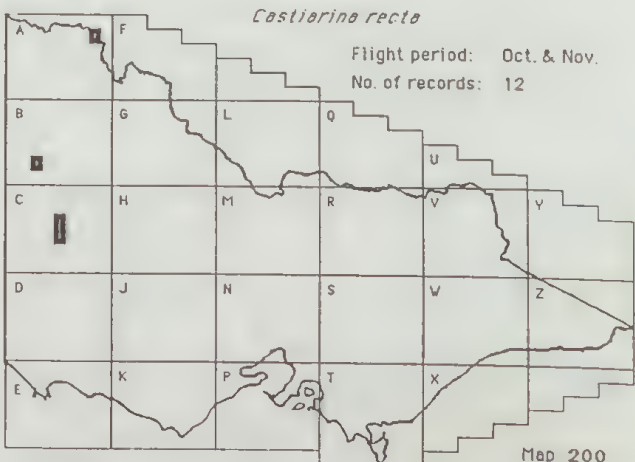
Flight period: Jan. & Feb.  
No. of records: 3



Map 199

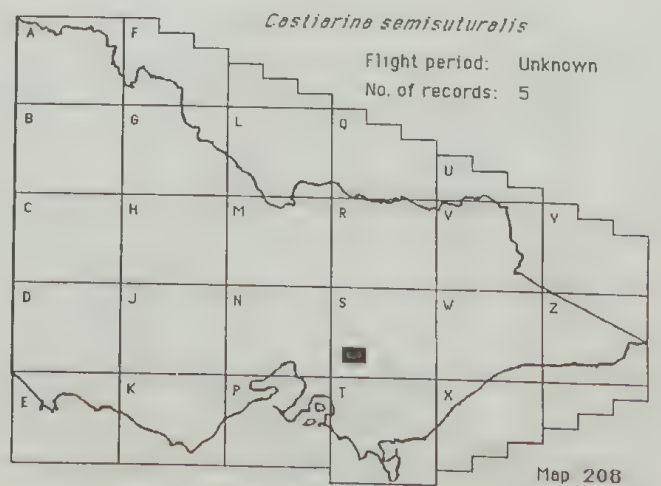
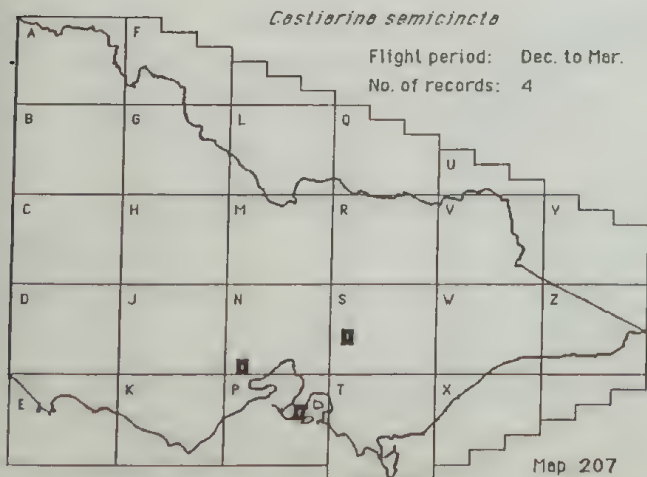
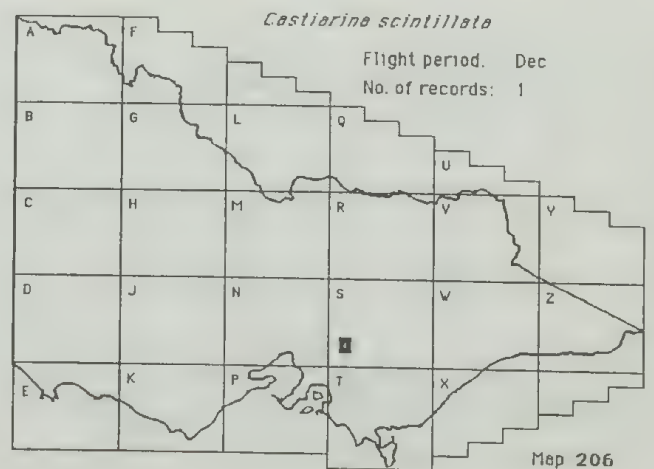
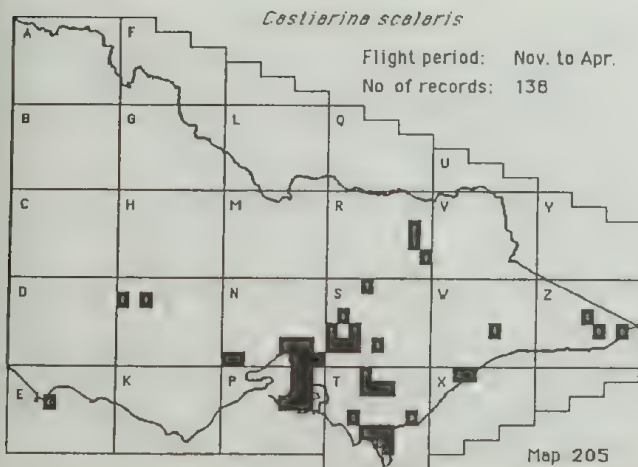
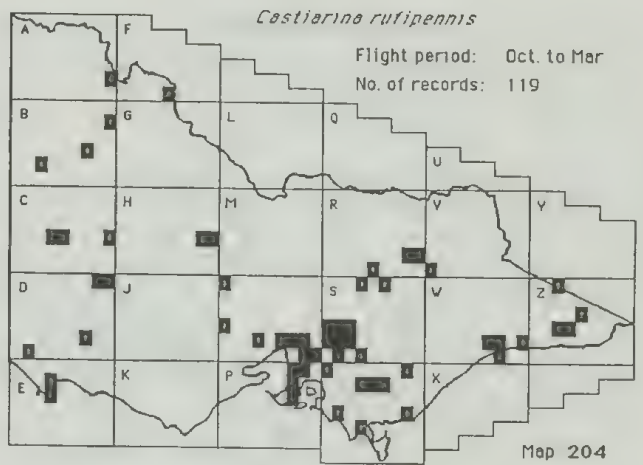
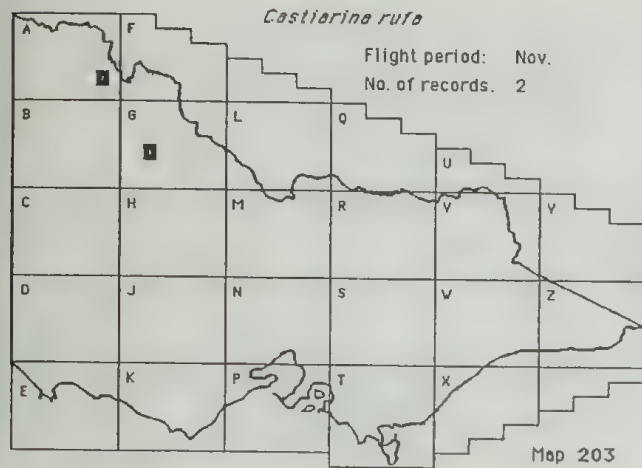
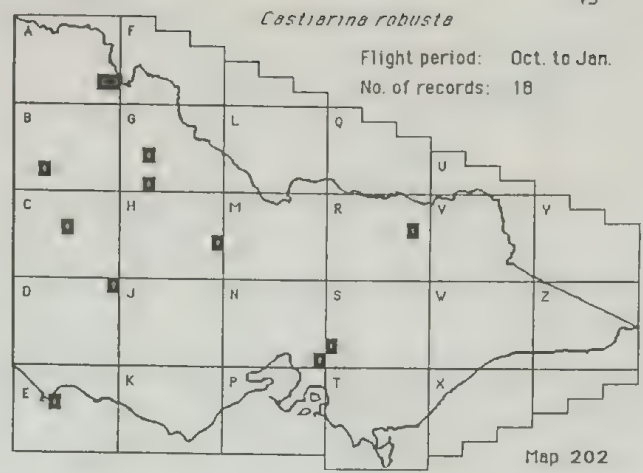
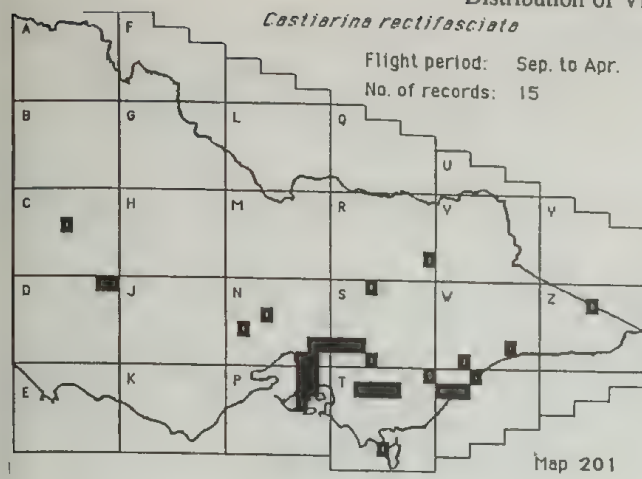
*Castiarina recta*

Flight period: Oct. & Nov.  
No. of records: 12



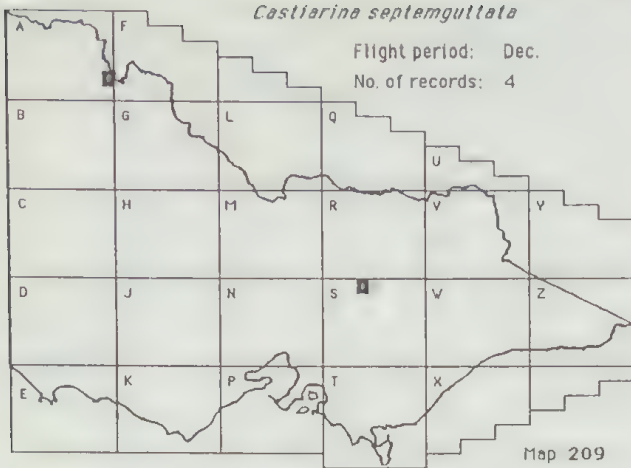
Map 200





*Castiarina septemguttata*

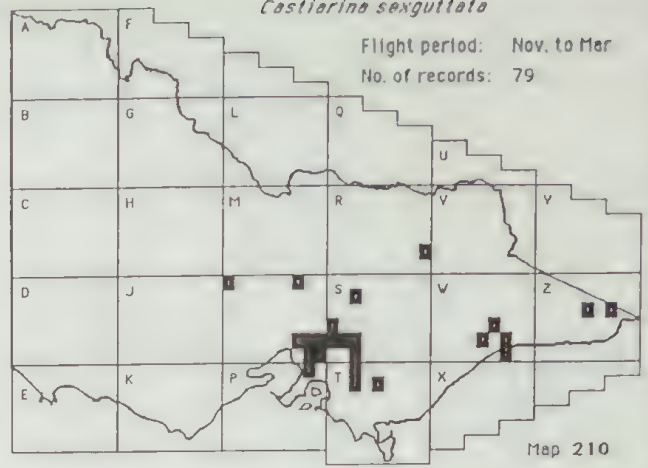
Flight period: Dec.  
No. of records: 4



Map 209

*Castiarina sexguttata*

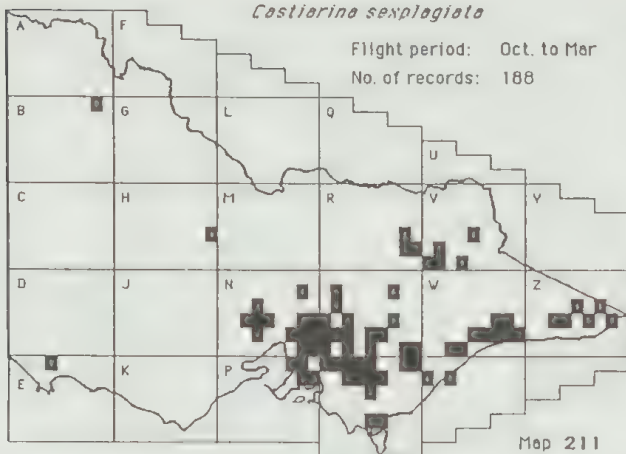
Flight period: Nov. to Mar  
No. of records: 79



Map 210

*Castiarina sexplogiata*

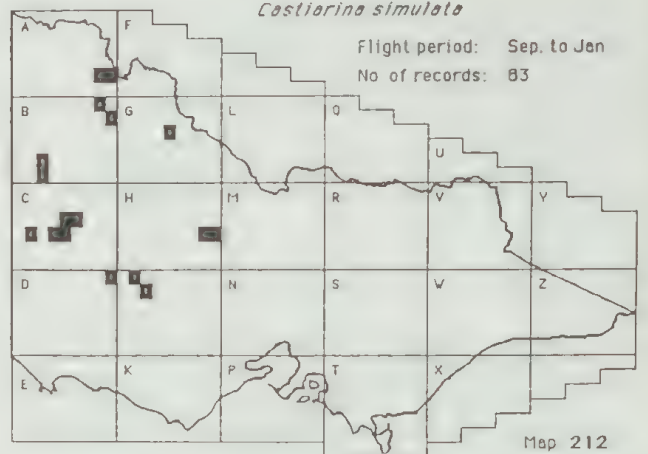
Flight period: Oct. to Mar  
No. of records: 188



Map 211

*Castiarina simulata*

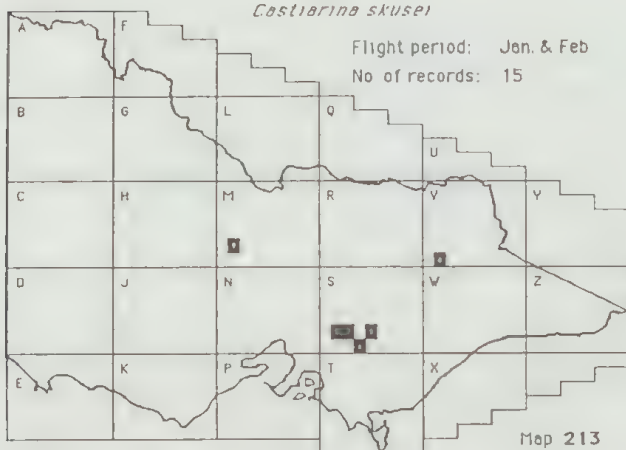
Flight period: Sep. to Jan  
No. of records: 83



Map 212

*Castiarina skusei*

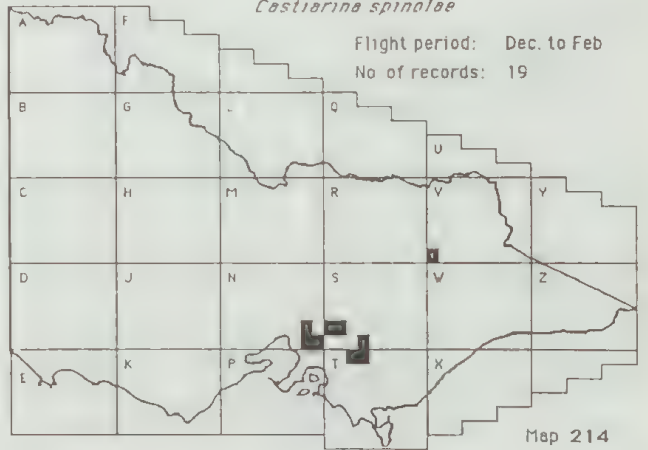
Flight period: Jan. & Feb  
No. of records: 15



Map 213

*Castiarina spinulæ*

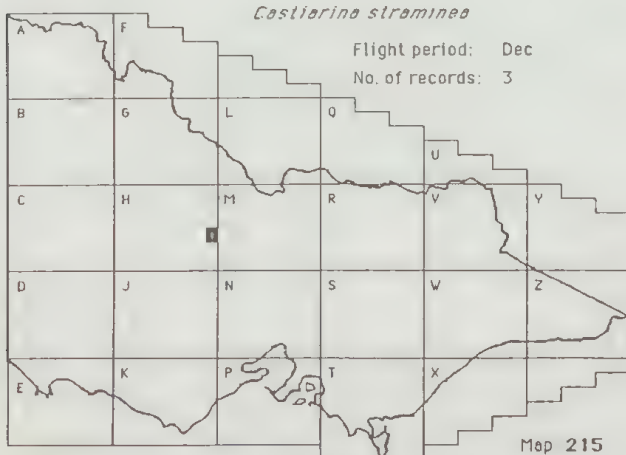
Flight period: Dec. to Feb  
No. of records: 19



Map 214

*Castiarina straminea*

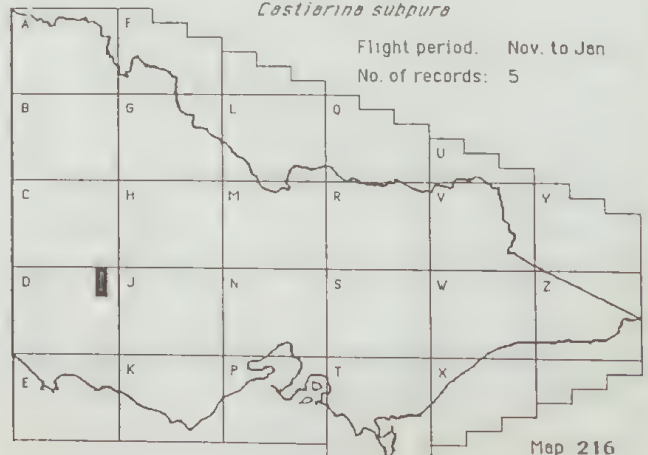
Flight period: Dec  
No. of records: 3



Map 215

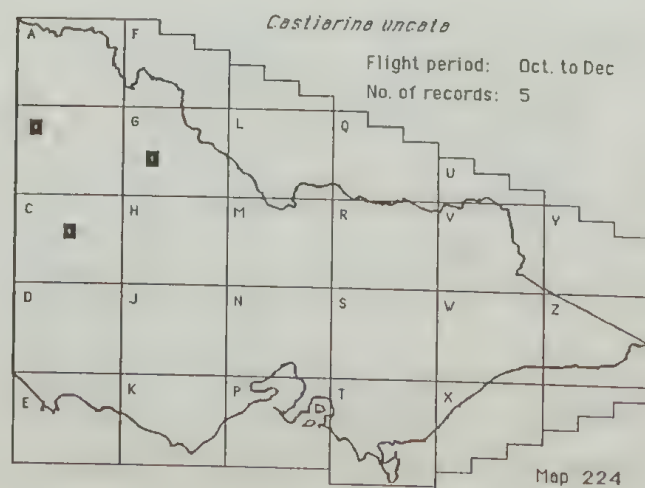
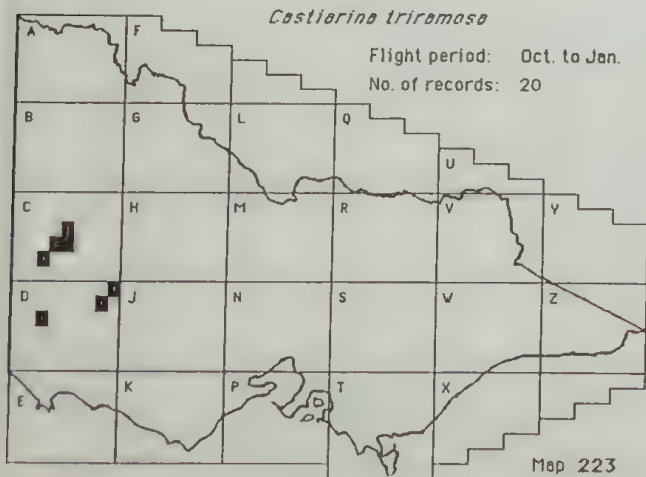
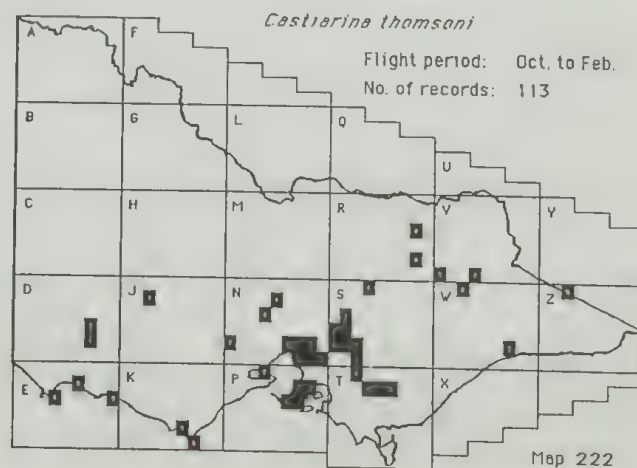
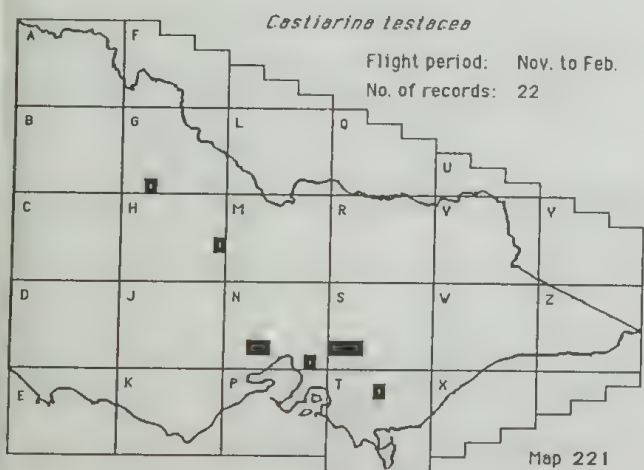
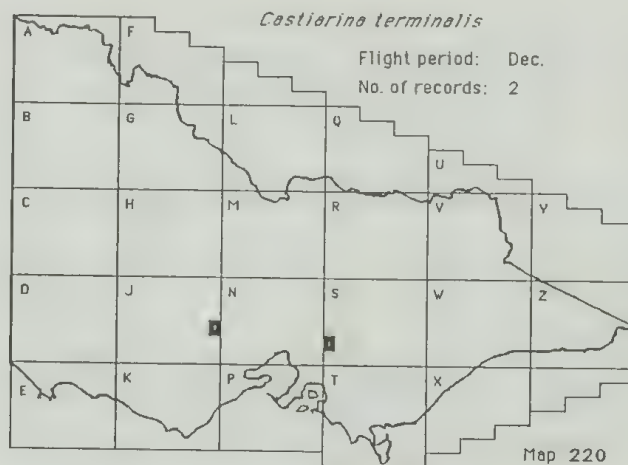
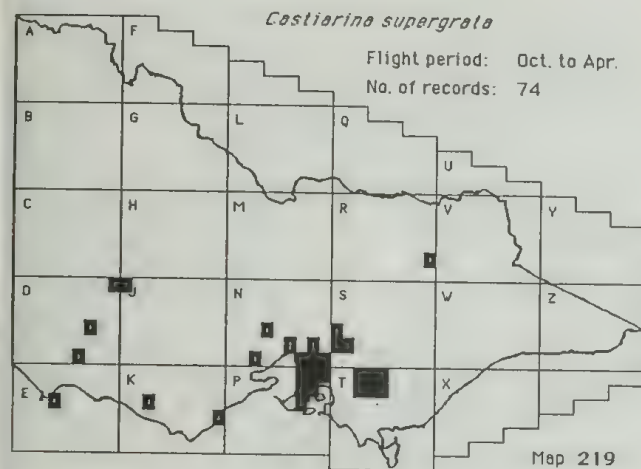
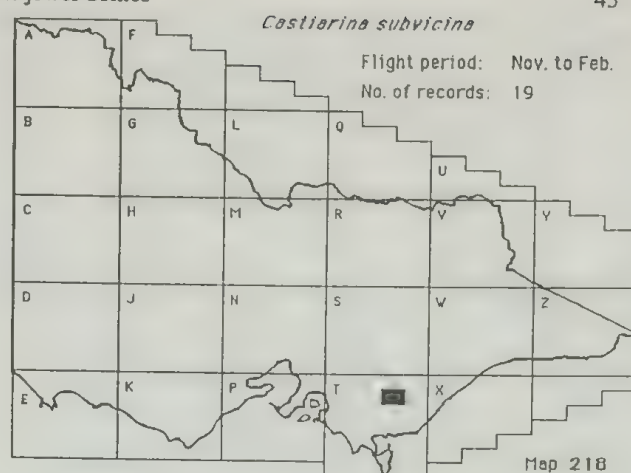
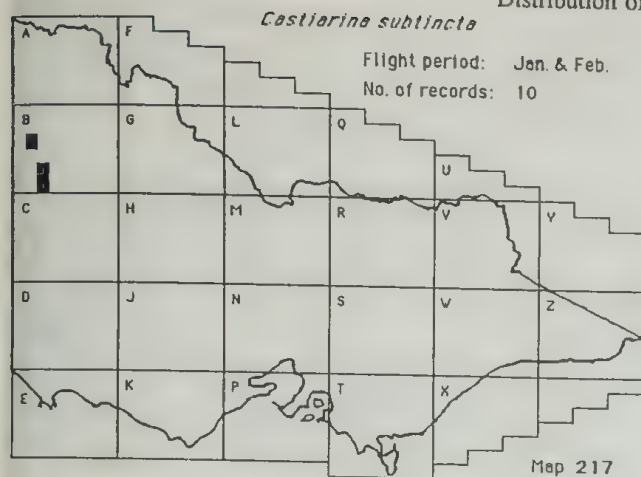
*Castiarina subpura*

Flight period: Nov. to Jan  
No. of records: 5



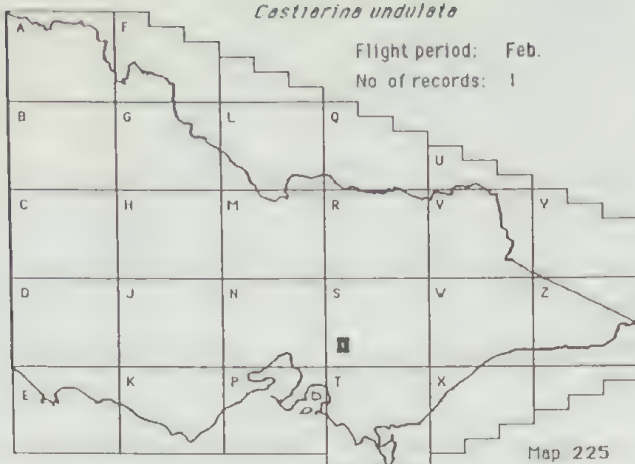
Map 216





*Castiarina undulata*

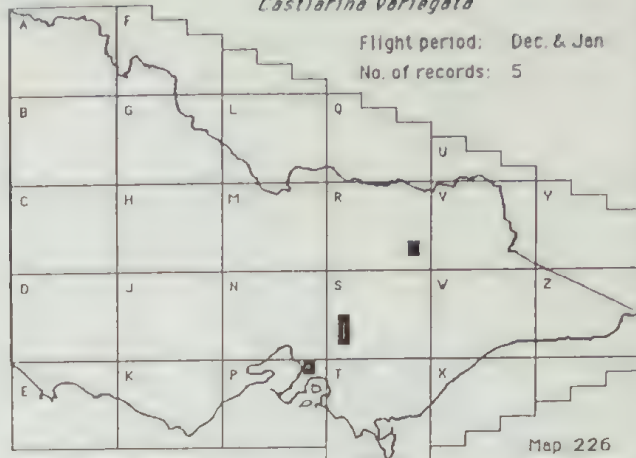
Flight period: Feb.  
No. of records: 1



Map 225

*Castiarina variegata*

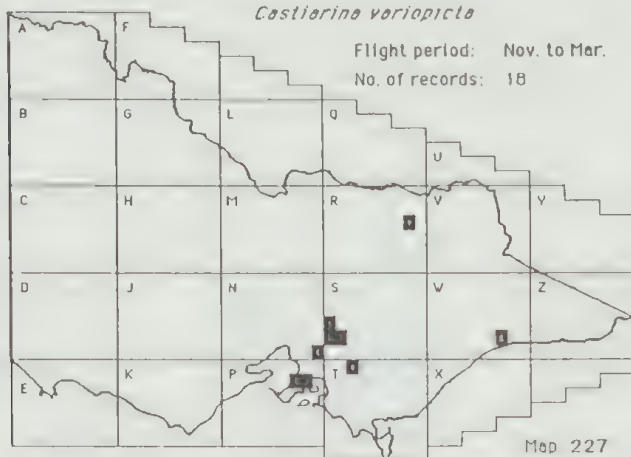
Flight period: Dec. & Jan  
No. of records: 5



Map 226

*Castiarina variopicta*

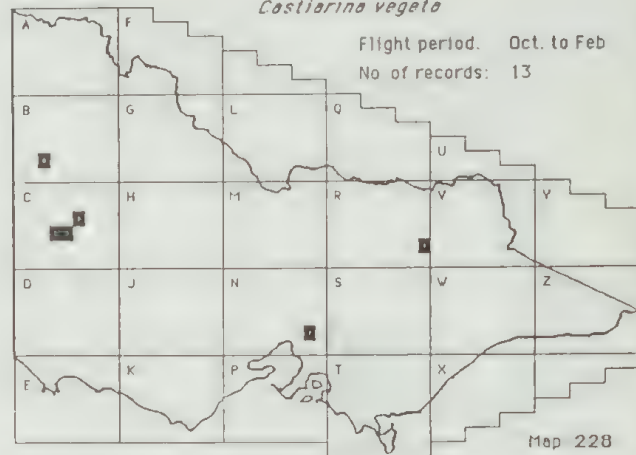
Flight period: Nov. to Mar.  
No. of records: 18



Map 227

*Castiarina vegata*

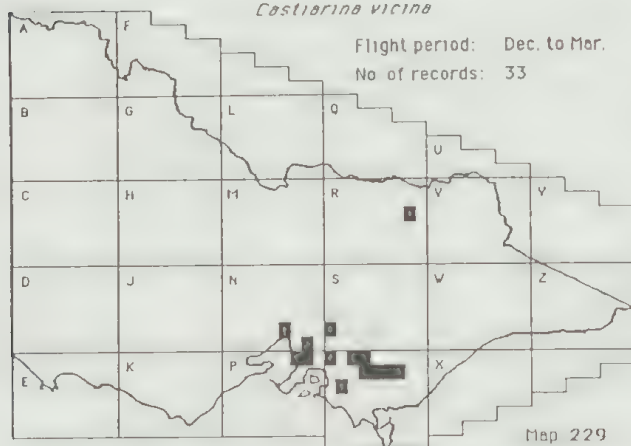
Flight period: Oct. to Feb  
No. of records: 13



Map 228

*Castiarina vicina*

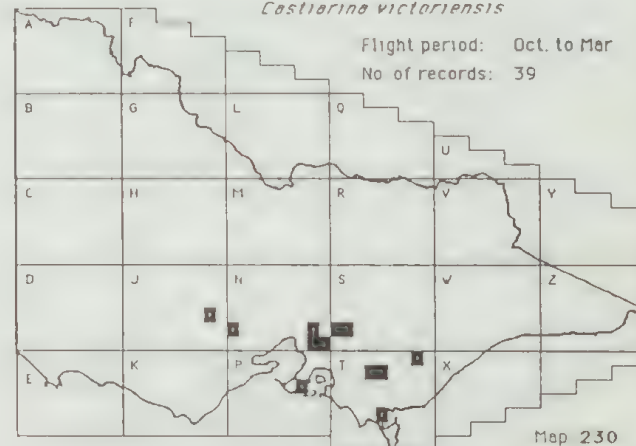
Flight period: Dec. to Mar.  
No. of records: 33



Map 229

*Castiarina victoriensis*

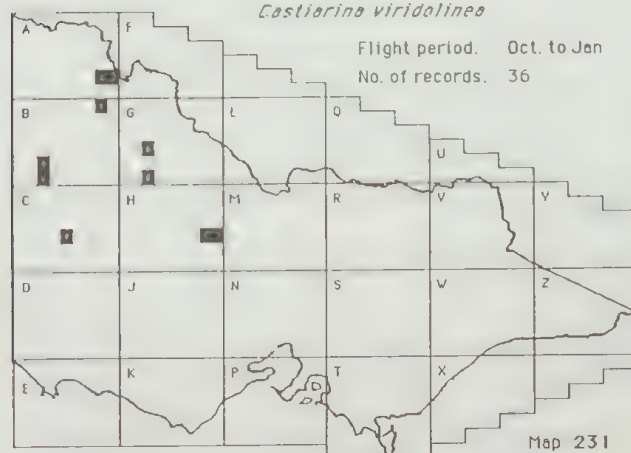
Flight period: Oct. to Mar  
No. of records: 39



Map 230

*Castiarina viridolinea*

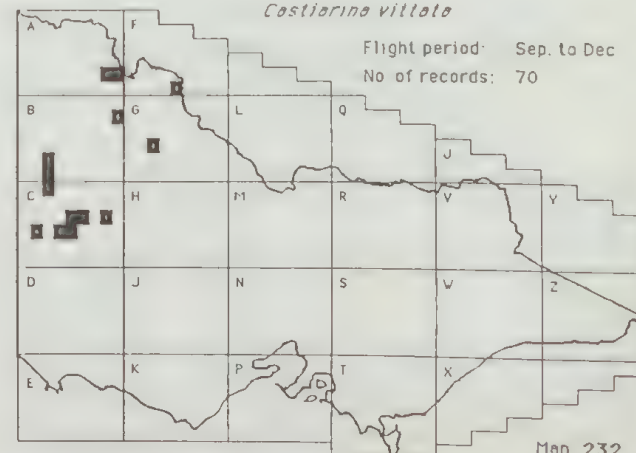
Flight period: Oct. to Jan  
No. of records: 36



Map 231

*Castiarina vittata*

Flight period: Sep. to Dec  
No. of records: 70

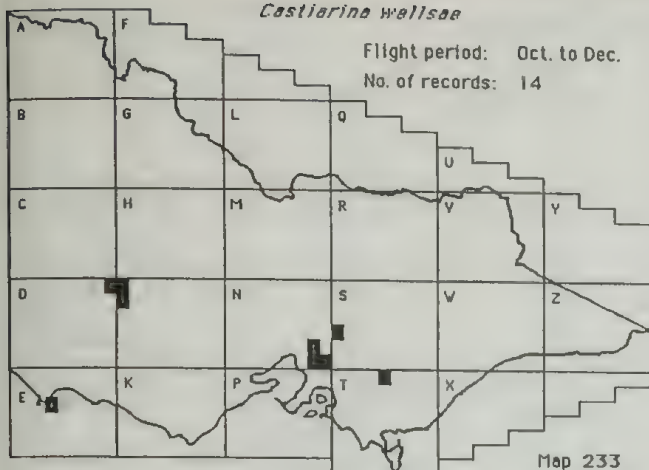


Map 232



*Castiarina wellssae*

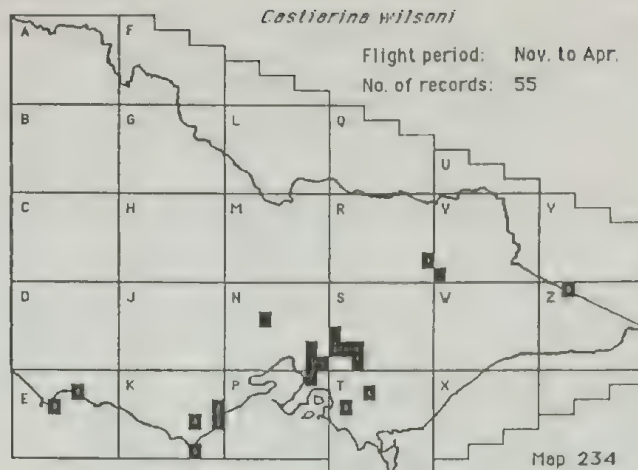
Flight period: Oct. to Dec.  
No. of records: 14



Map 233

*Castiarina wilsoni*

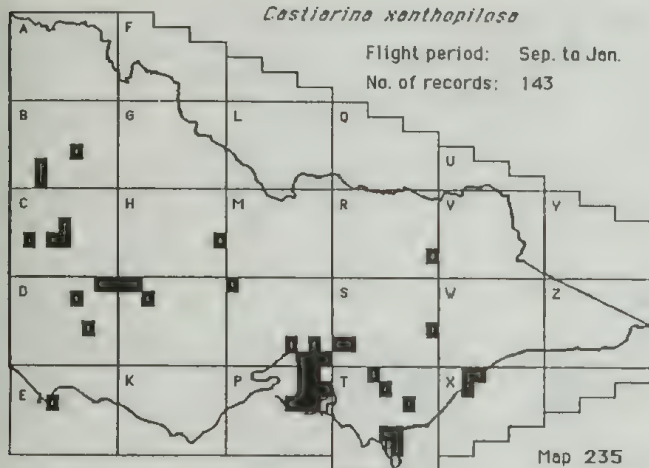
Flight period: Nov. to Apr.  
No. of records: 55



Map 234

*Castiarina xanthopilosa*

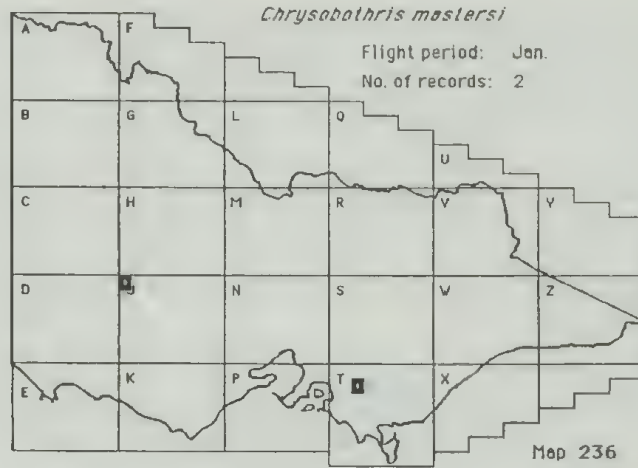
Flight period: Sep. to Jan.  
No. of records: 143



Map 235

*Chrysobothris mastersi*

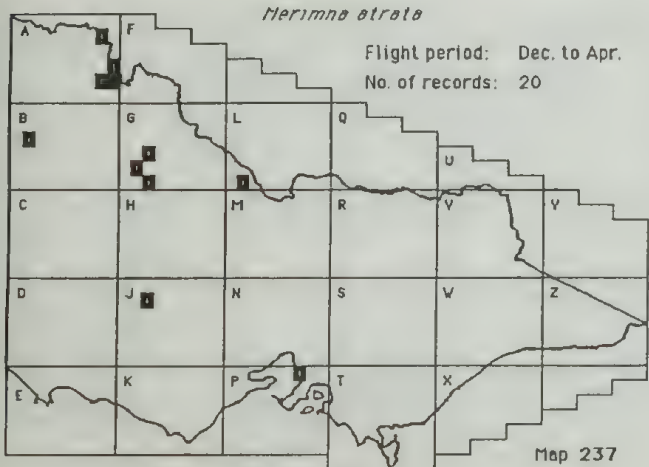
Flight period: Jan.  
No. of records: 2



Map 236

*Merimna atrata*

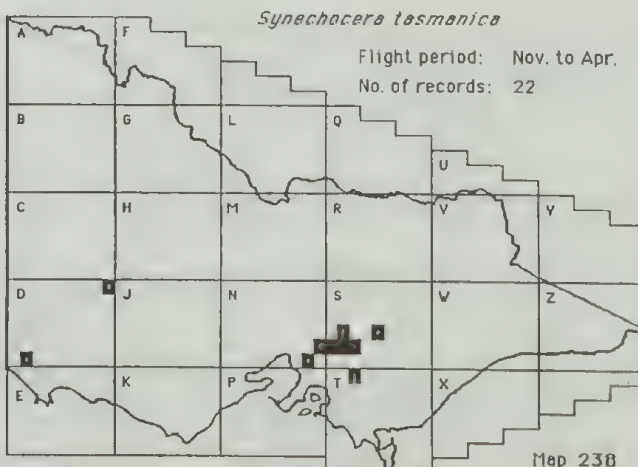
Flight period: Dec. to Apr.  
No. of records: 20



Map 237

*Synechocera tasmanica*

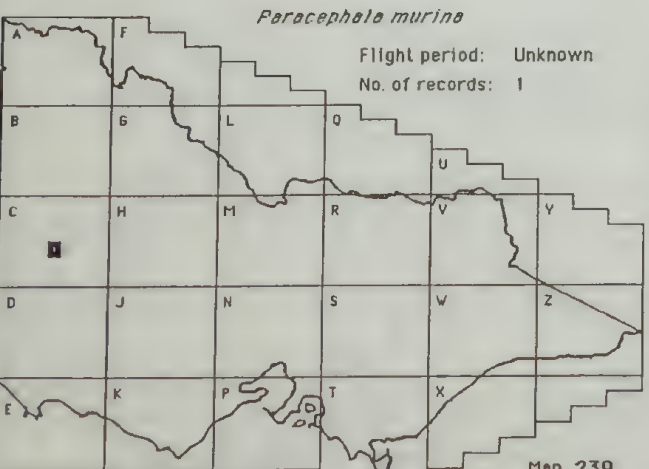
Flight period: Nov. to Apr.  
No. of records: 22



Map 238

*Paracephala murina*

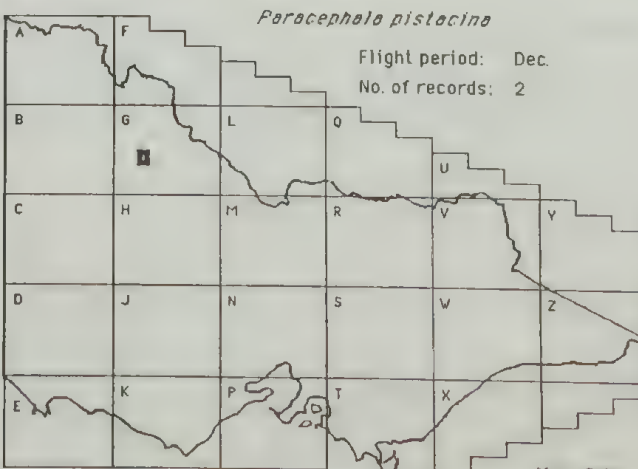
Flight period: Unknown  
No. of records: 1



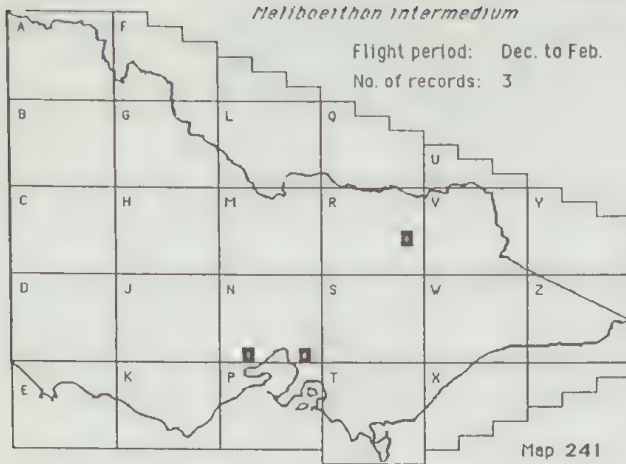
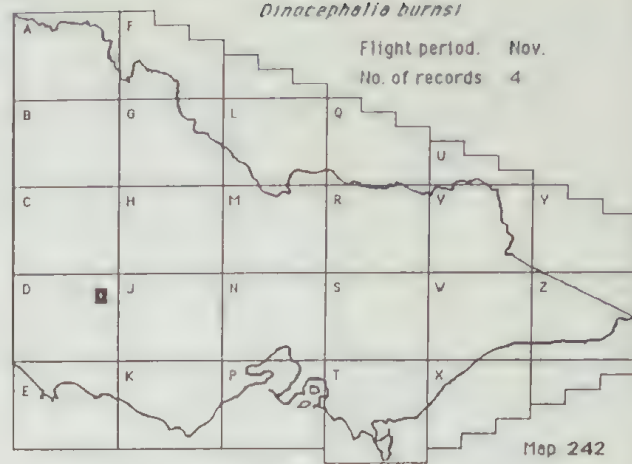
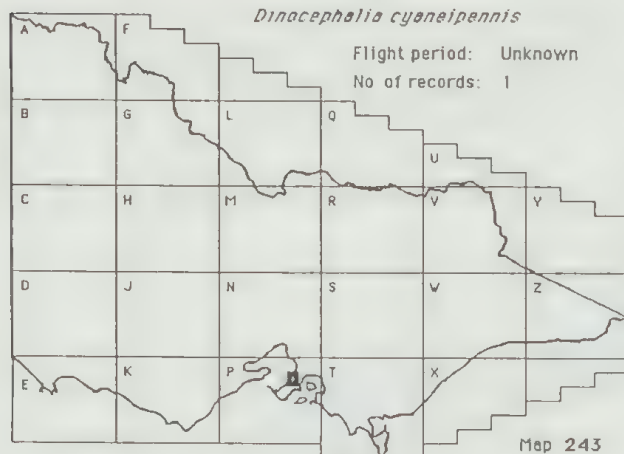
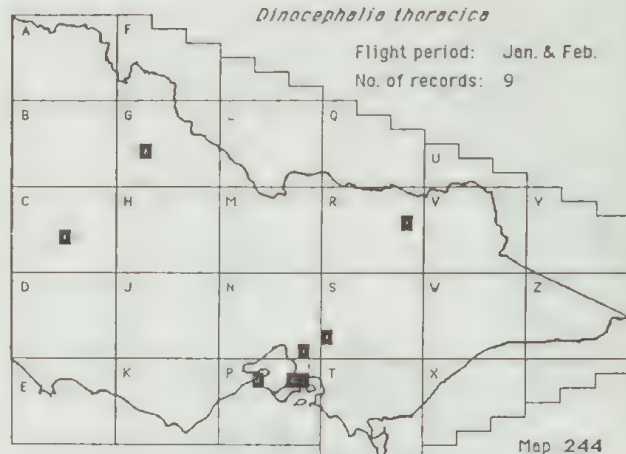
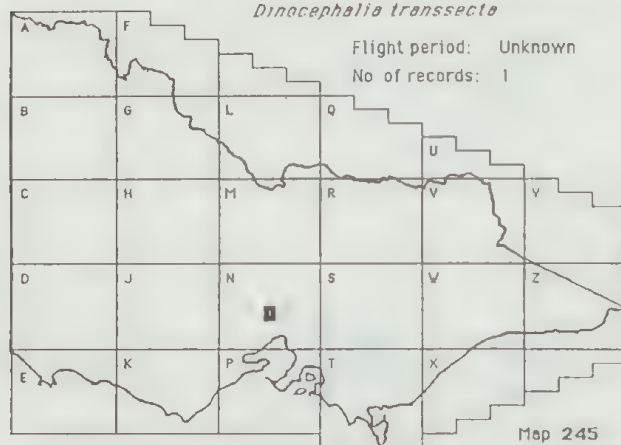
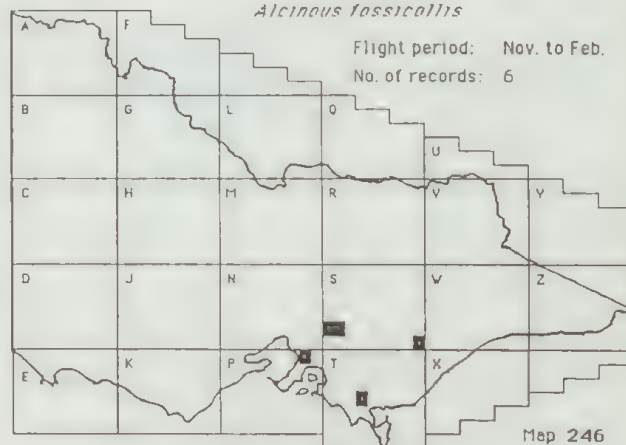
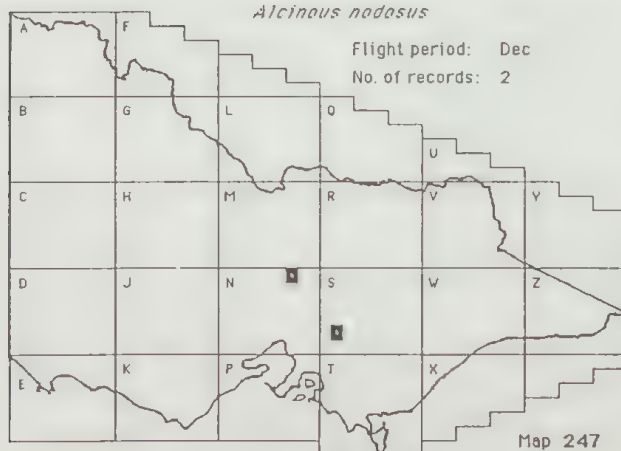
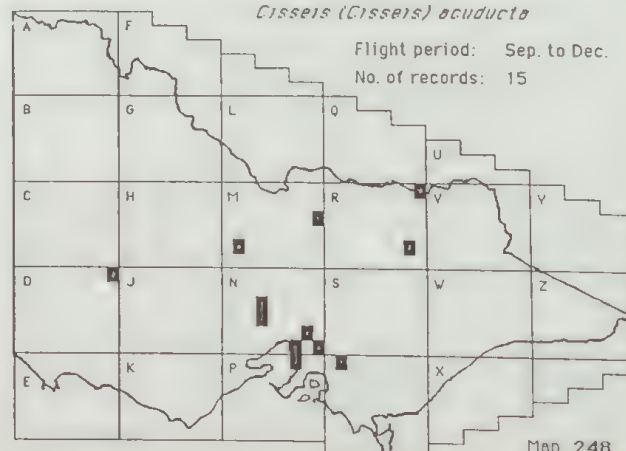
Map 239

*Paracephala pistacina*

Flight period: Dec.  
No. of records: 2



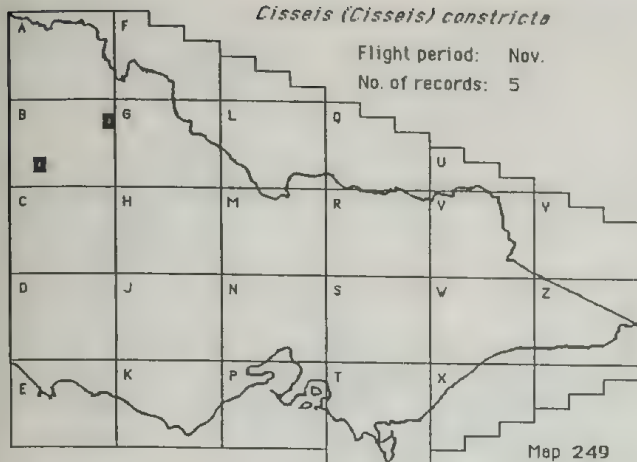
Map 240

*Heliboethon intermedium**Dinocephalia burnsi**Dinocephalia cyaneipennis**Dinocephalia thoracica**Dinocephalia transsecta**Alcinous fassicollis**Alcinous nodosus**Cisseis (Cisseis) aceducta*



*Cisseis (Cisseis) constricta*

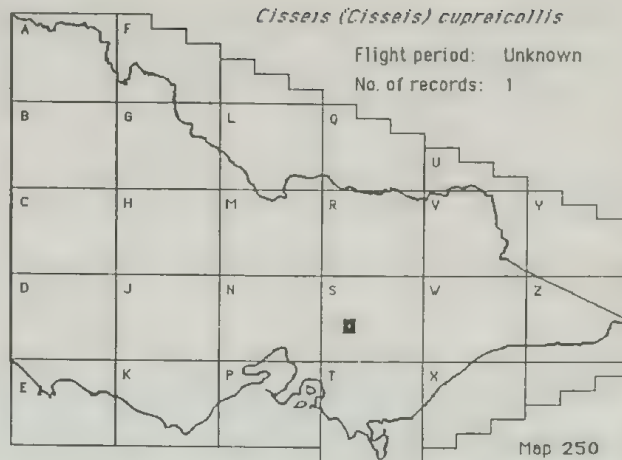
Flight period: Nov.  
No. of records: 5



Map 249

*Cisseis (Cisseis) cupreicollis*

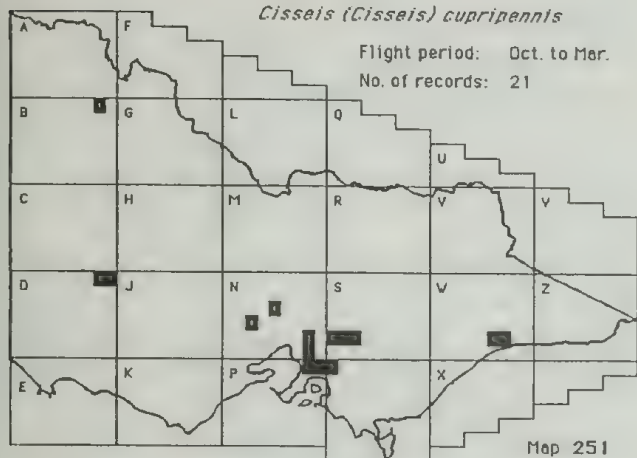
Flight period: Unknown  
No. of records: 1



Map 250

*Cisseis (Cisseis) cupripennis*

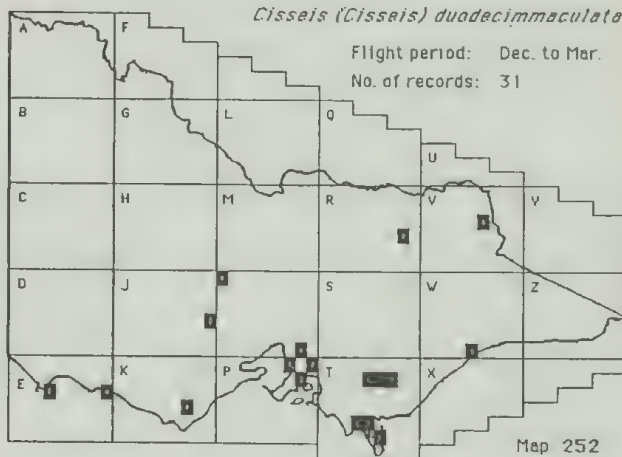
Flight period: Oct. to Mar.  
No. of records: 21



Map 251

*Cisseis (Cisseis) duodecimmaculata*

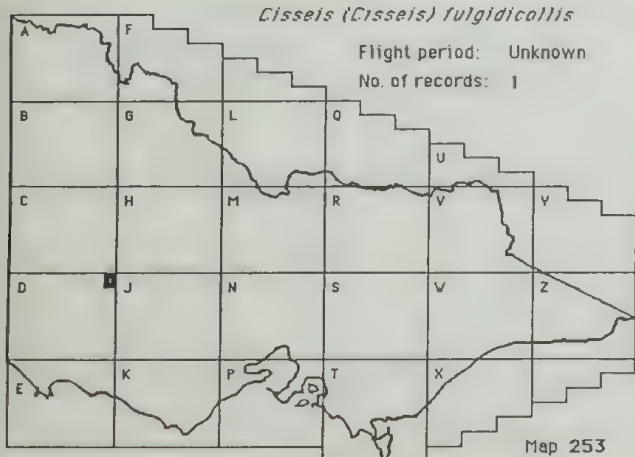
Flight period: Dec. to Mar.  
No. of records: 31



Map 252

*Cisseis (Cisseis) fulgidicollis*

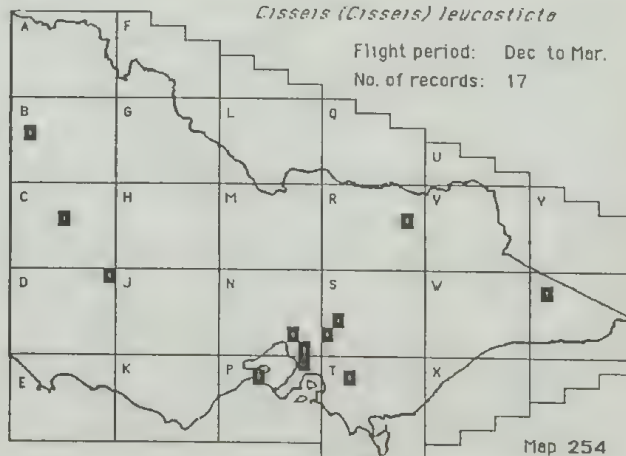
Flight period: Unknown  
No. of records: 1



Map 253

*Cisseis (Cisseis) leucosticta*

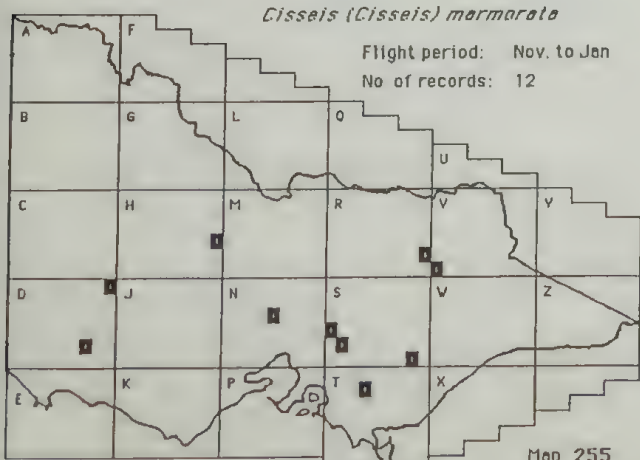
Flight period: Dec to Mar.  
No. of records: 17



Map 254

*Cisseis (Cisseis) marmorata*

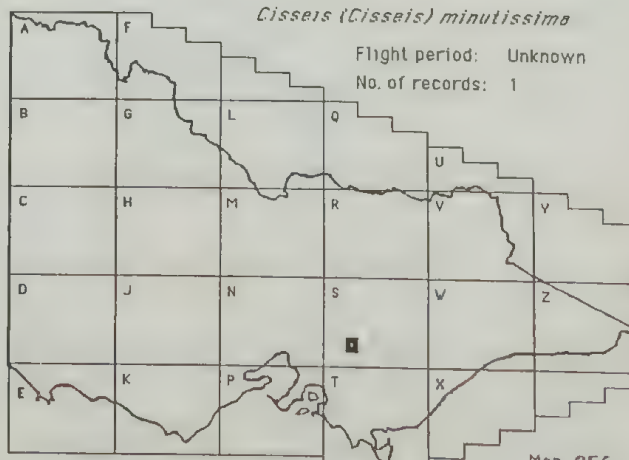
Flight period: Nov. to Jan  
No. of records: 12



Map 255

*Cisseis (Cisseis) minutissima*

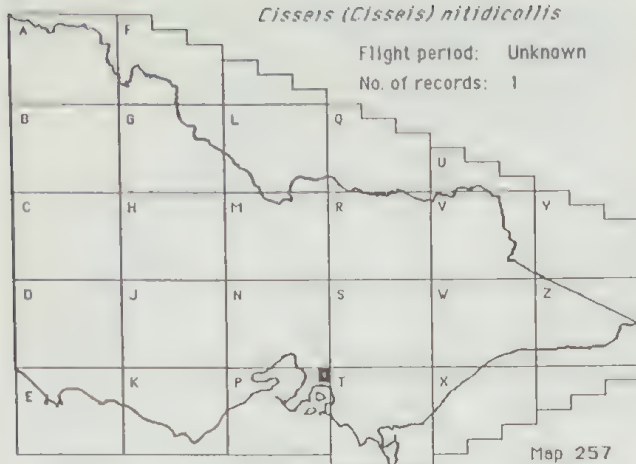
Flight period: Unknown  
No. of records: 1



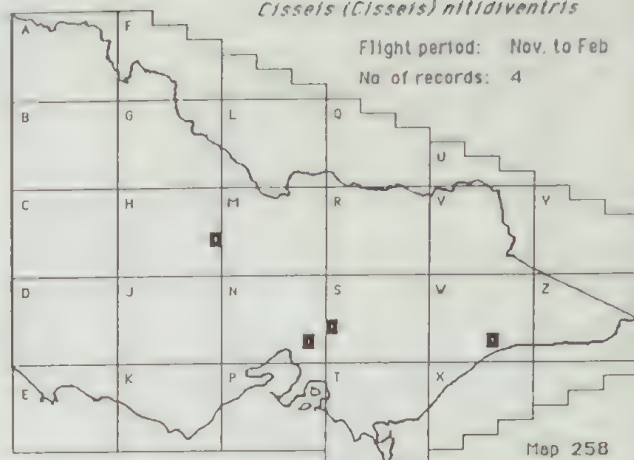
Map 256

*Cisseis (Cisseis) nitidicollis*

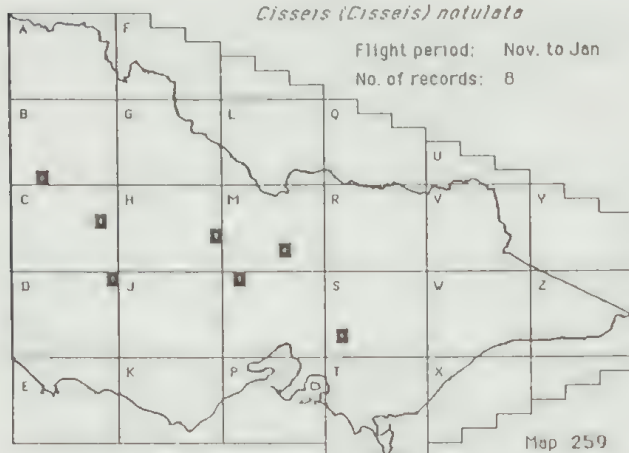
Flight period: Unknown  
No. of records: 1

*Cisseis (Cisseis) nitidiventris*

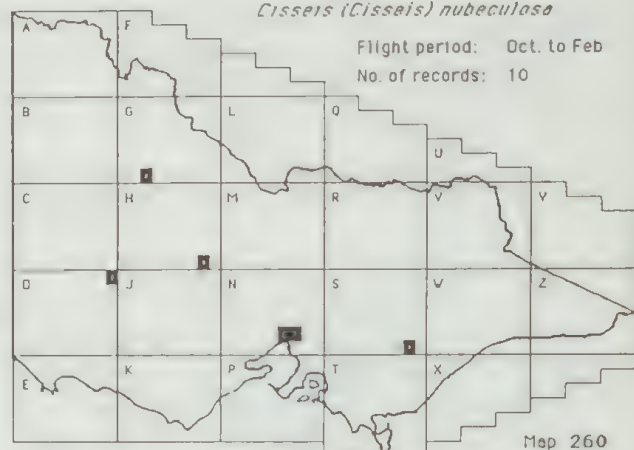
Flight period: Nov. to Feb  
No. of records: 4

*Cisseis (Cisseis) notulata*

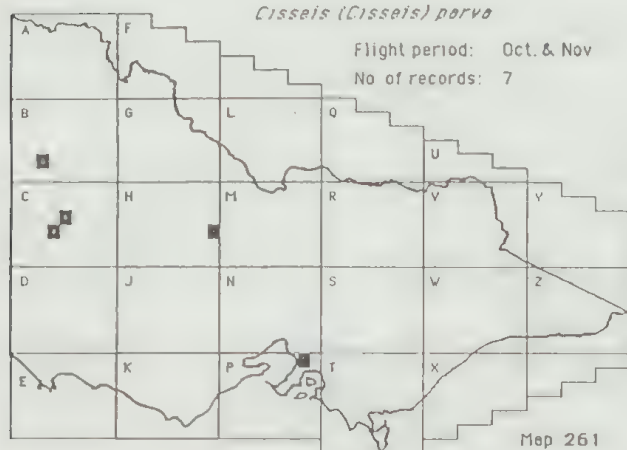
Flight period: Nov. to Jan  
No. of records: 8

*Cisseis (Cisseis) nubeculosa*

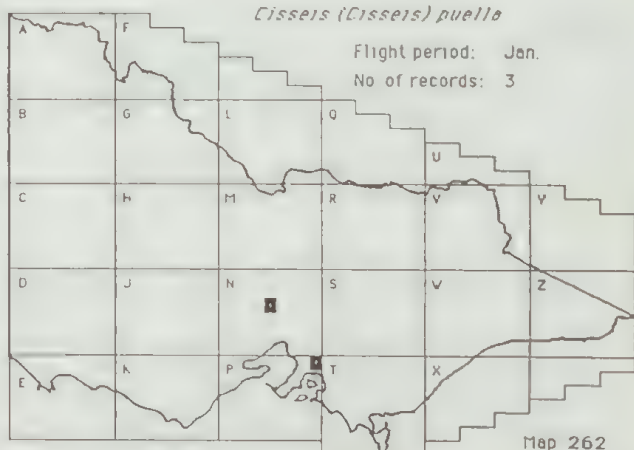
Flight period: Oct. to Feb  
No. of records: 10

*Cisseis (Cisseis) parva*

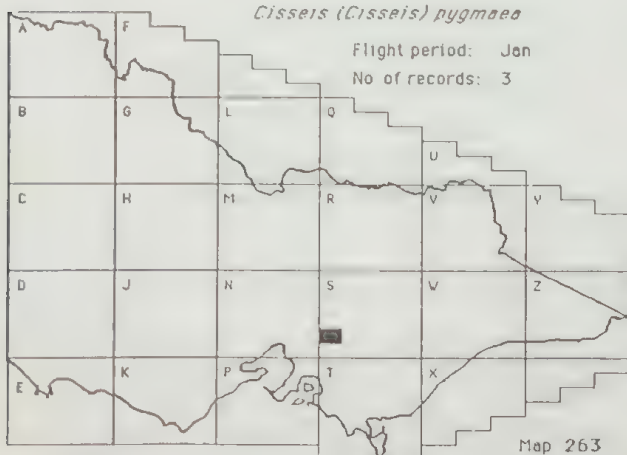
Flight period: Oct. & Nov  
No. of records: 7

*Cisseis (Cisseis) puella*

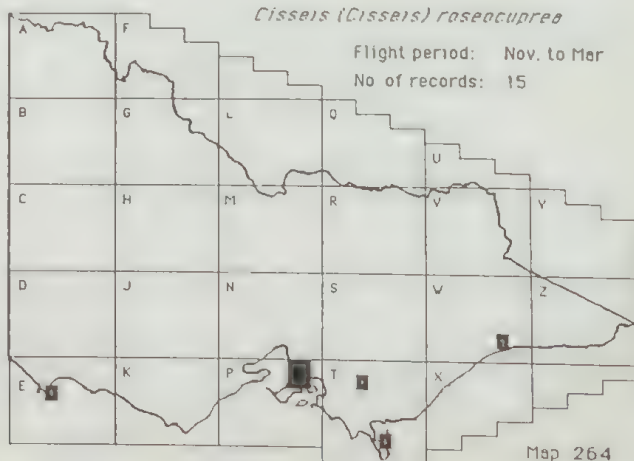
Flight period: Jan.  
No. of records: 3

*Cisseis (Cisseis) pygmaea*

Flight period: Jan  
No. of records: 3

*Cisseis (Cisseis) roseocuprea*

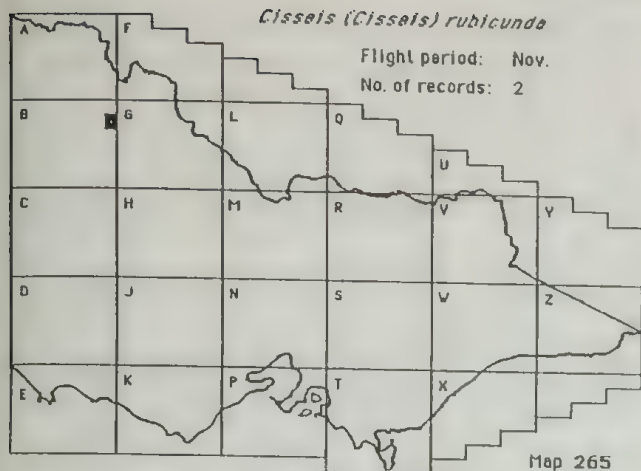
Flight period: Nov. to Mar  
No. of records: 15





*Cisseis (Cisseis) rubicunda*

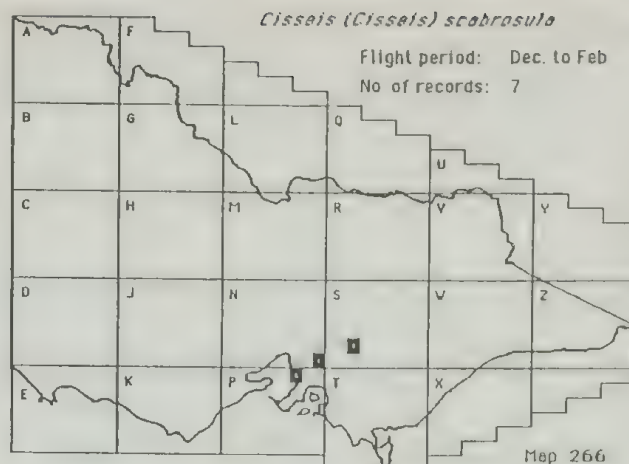
Flight period: Nov.  
No. of records: 2



Map 265

*Cisseis (Cisseis) scabrula*

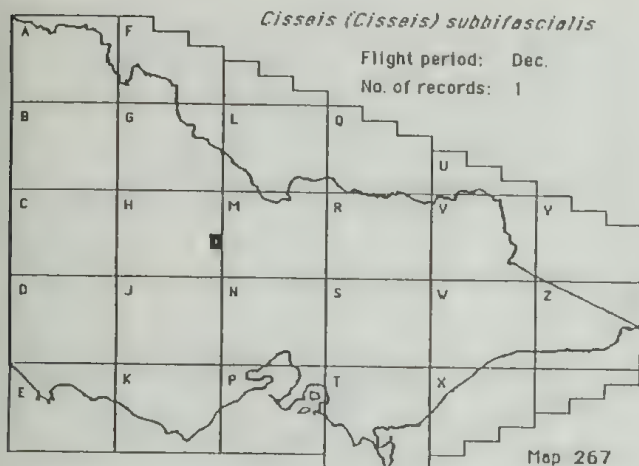
Flight period: Dec. to Feb  
No. of records: 7



Map 266

*Cisseis (Cisseis) subfascialis*

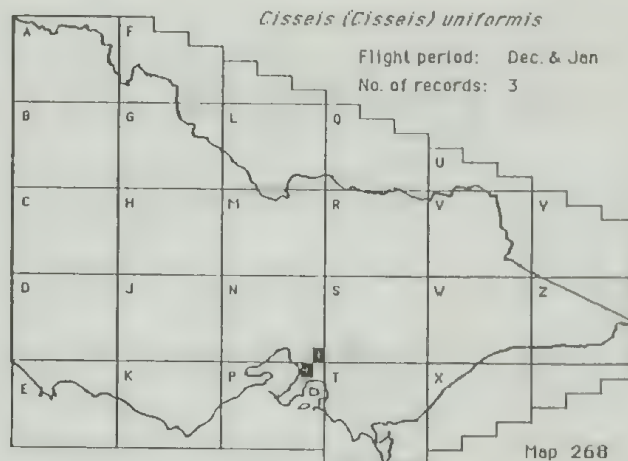
Flight period: Dec.  
No. of records: 1



Map 267

*Cisseis (Cisseis) uniformis*

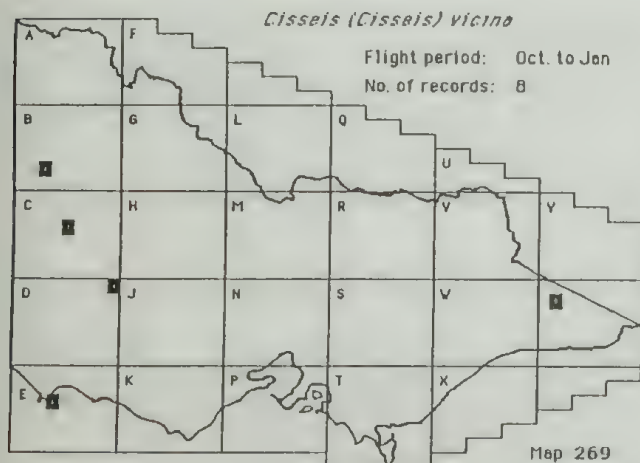
Flight period: Dec. & Jan  
No. of records: 3



Map 268

*Cisseis (Cisseis) vicina*

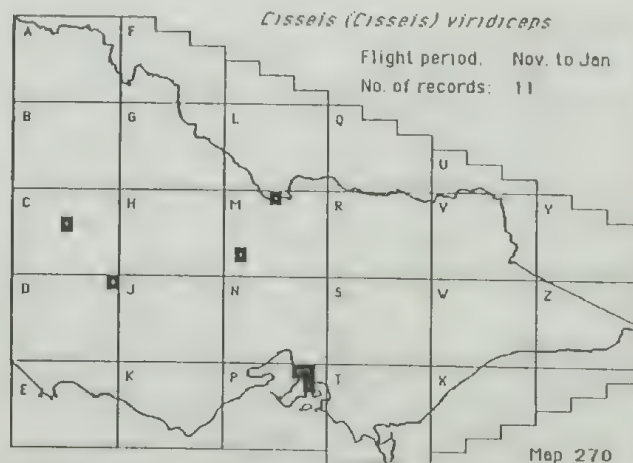
Flight period: Oct. to Jan  
No. of records: 8



Map 269

*Cisseis (Cisseis) viridiceps*

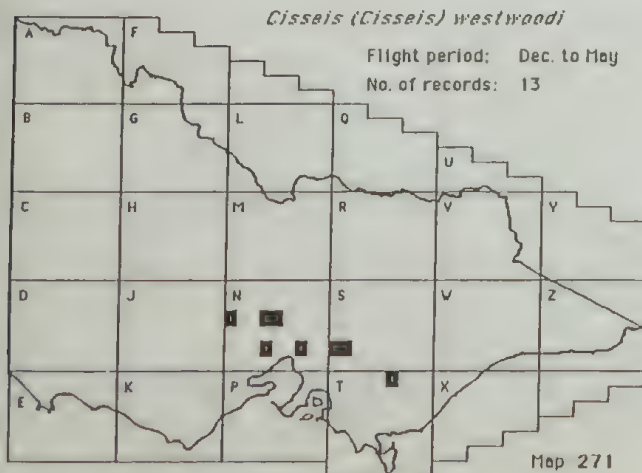
Flight period: Nov. to Jan  
No. of records: 11



Map 270

*Cisseis (Cisseis) westwoodi*

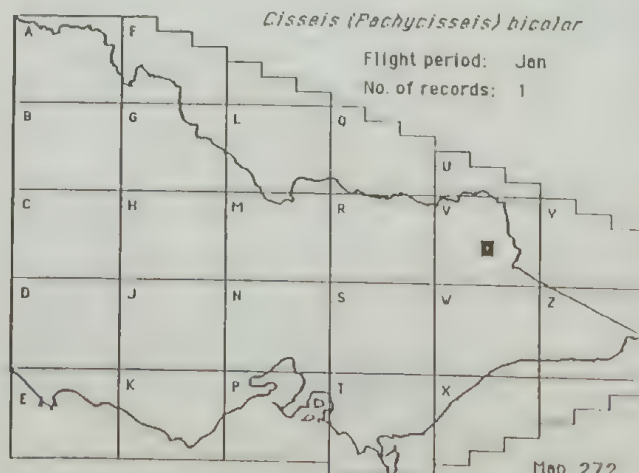
Flight period: Dec. to May  
No. of records: 13



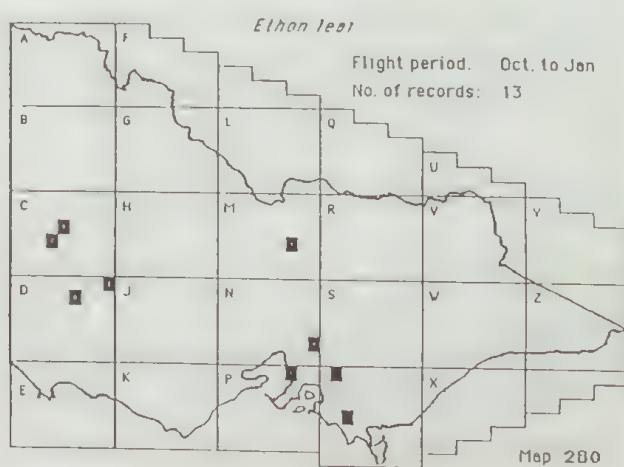
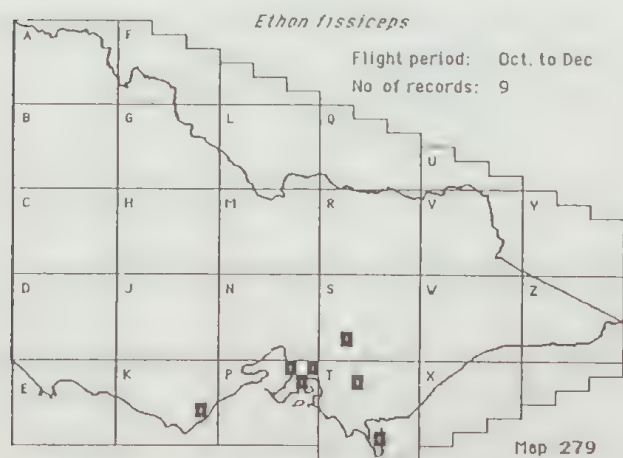
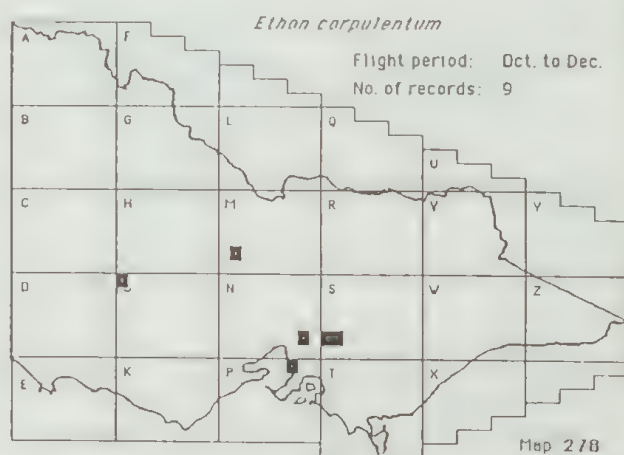
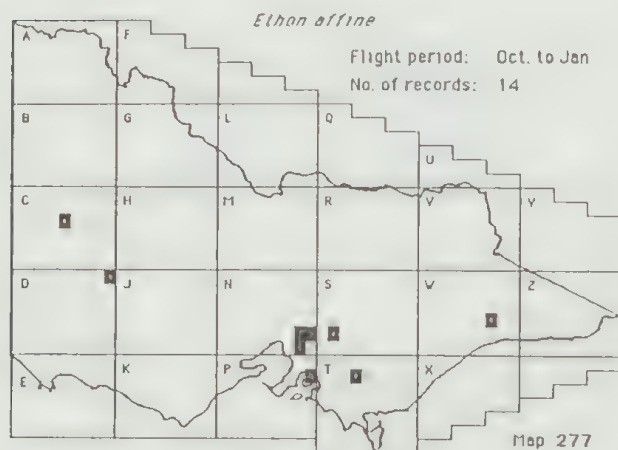
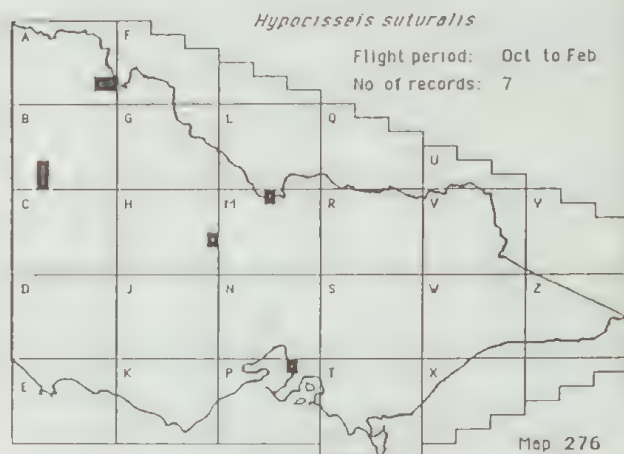
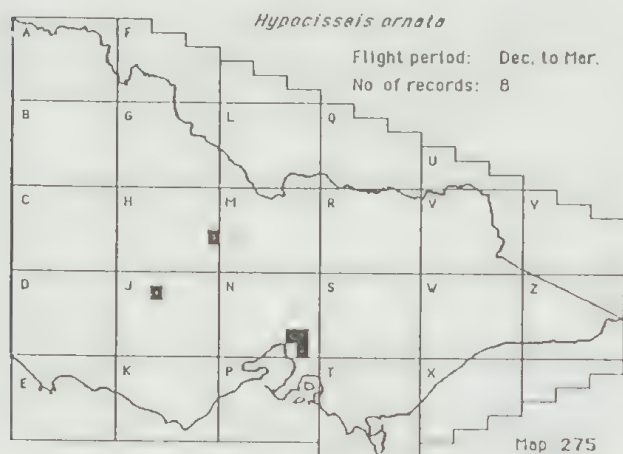
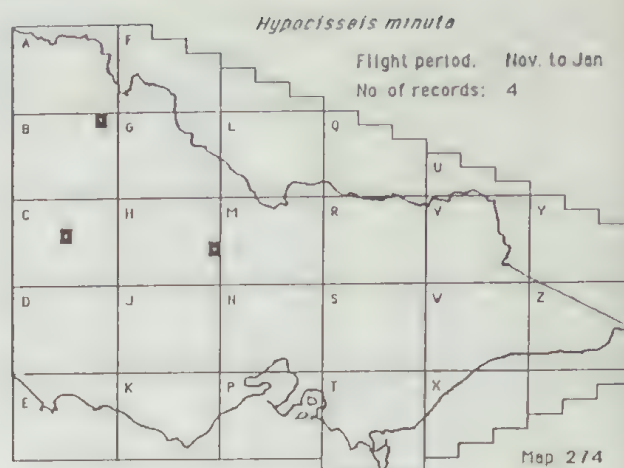
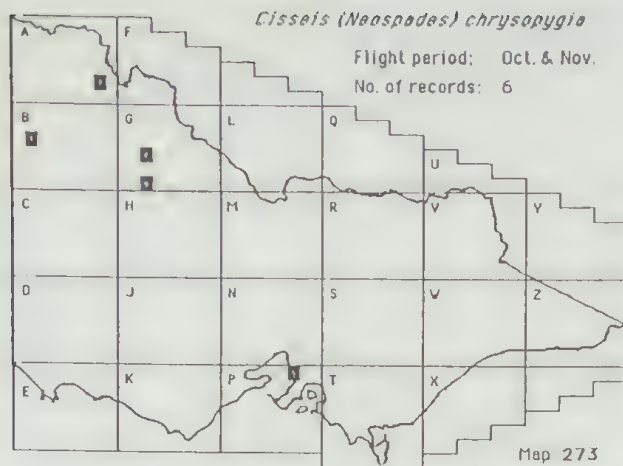
Map 271

*Cisseis (Pachycisseis) bicolor*

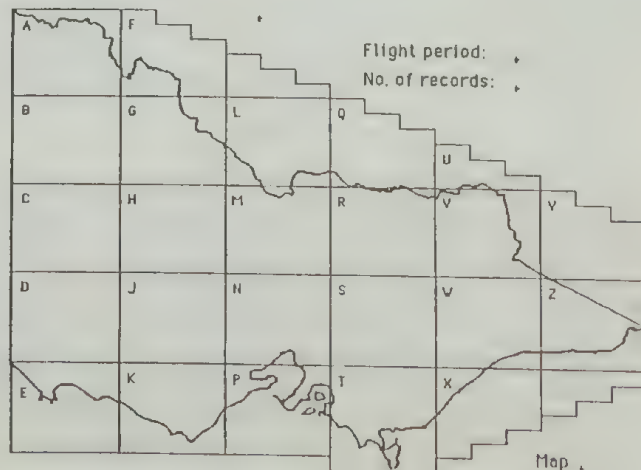
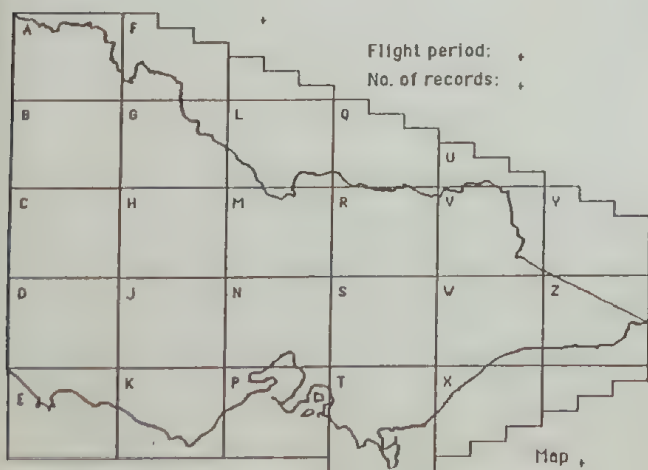
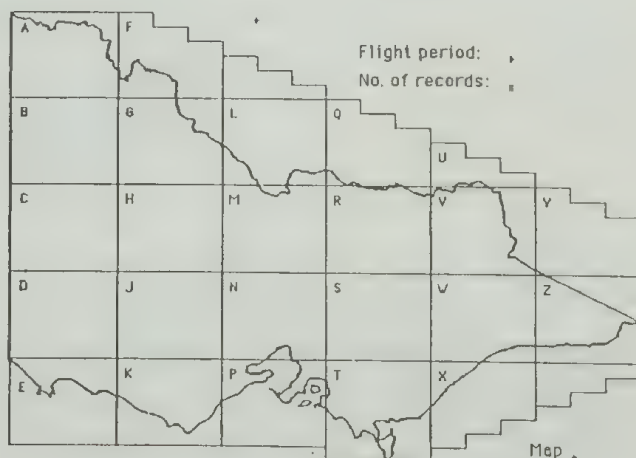
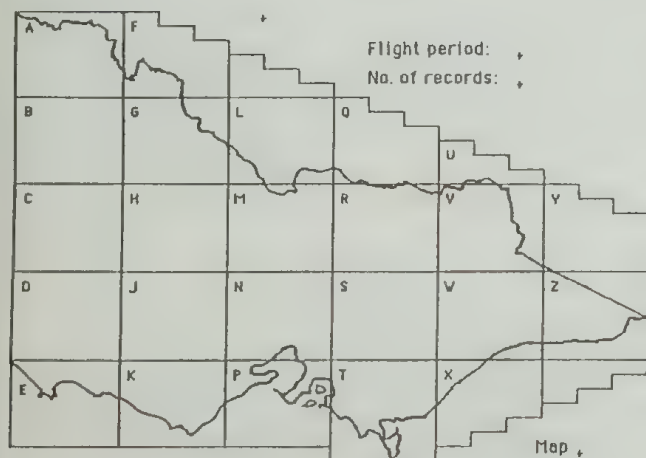
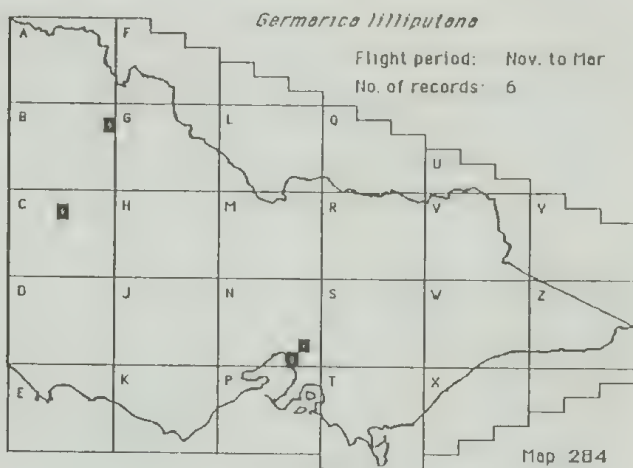
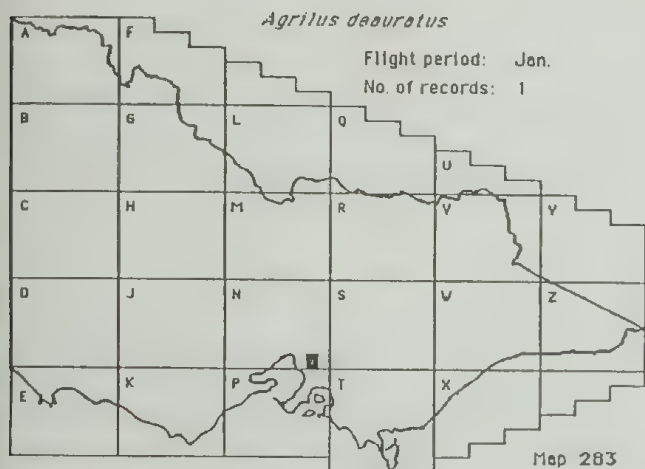
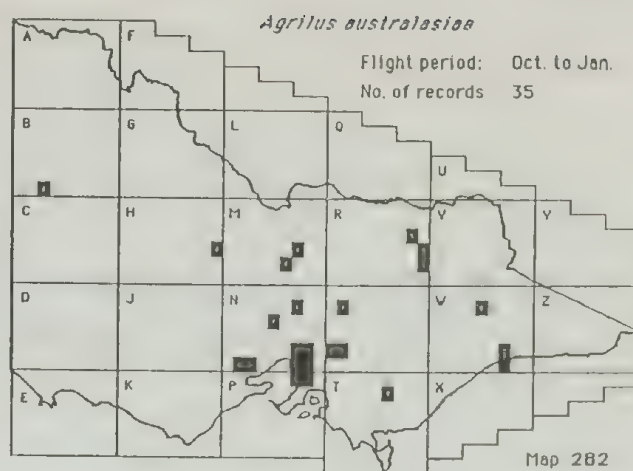
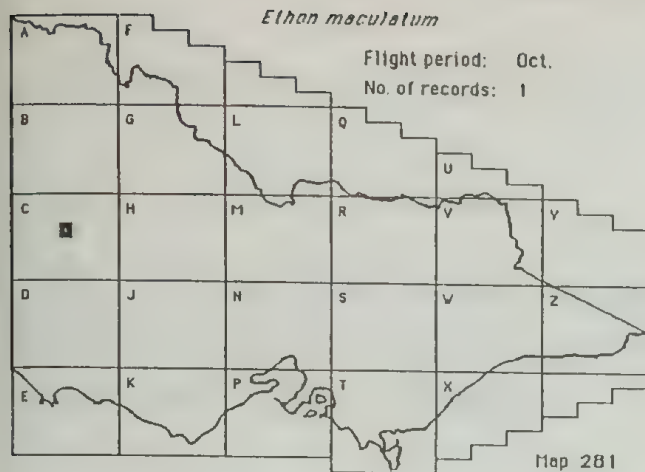
Flight period: Jan  
No. of records: 1



Map 272











# The macroinvertebrate assemblages in pools and riffles in two intermittent streams (Werribee and Lerderderg Rivers, southern central Victoria)

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**Abstract.** Boulton, A.J. and Lake, P.S. 1992. The macroinvertebrate assemblages in pools and riffles in two intermittent streams (Werribee and Lerderderg Rivers, southern central Victoria). *Occasional Papers from the Museum of Victoria* 5: 55-71.

The macroinvertebrate assemblages in pools and riffles at four study sites in the upper reaches of the Werribee and Lerderderg Rivers in central Victoria were sampled from 1982 to 1984 using box and suction samplers and sweep nets. A total of 258 invertebrate taxa was collected in 1175 samples: Mollusca (6 taxa), Crustacea (9), Ephemeroptera (5), Odonata (5), Plecoptera (15), Hemiptera (9), Coleoptera (64), Diptera (89), Trichoptera (29), and 27 other taxa. These taxa and their occurrences in each habitat at each site during each year are listed. Species richness was greater in pools than in riffles in both rivers, probably reflecting the importance of these habitats as refuges when the streams dry. Each taxon was assigned to a functional feeding group based on mouth-part morphology, gut contents, observations in the laboratory, and published dietary studies. Predators were always the most diverse feeding group in all habitats (39% of all aquatic taxa) whereas relatively few taxa were collector-filterers (6%) or collector-shredders (5%). Collector-scrappers and collector-gatherers comprised 19% and 17% respectively, representing most of the individuals, and illustrating the generalized feeding modes of many stream invertebrates.

## Introduction

Despite the fact that intermittent and ephemeral streams drain over half of mainland Australia (Williams, 1983), we know very little about the ecology of these streams (Boulton and Suter, 1986). With the growing recognition of the importance of water in arid zones and the fragility of their aquatic systems (e.g., Ponder, 1986), it is crucial that fundamental survey data collected in intermittent streams in Australia are readily available. This need has partly been met for permanent streams in south-eastern Australia, by the publication of distribution lists of aquatic invertebrates (e.g., LaTrobe River, Victoria, Marchant et al., 1984).

It has also been suggested that intermittent streams in arid and semi-arid zones are likely to be highly sensitive harbingers of global climate change (Dahm and Molles, 1990). However, their variability in flow, especially in Australia (Finlayson and McMahon, 1988), means that relatively long-term and intensive studies are required in order to describe fully the resulting variation in community and ecosystem variables. This intensive faunal study of the Werribee and Lerderderg Rivers provides a baseline spanning two years of different flow regimes at four sites for comparison with data collected in the future during studies on long-term climatic change (cf. Gore et al., 1990). Furthermore, understanding the spatial and temporal heterogeneity of lotic systems and the "ecological strategies" used by the biota to persist

in these habitats are critical to assessing recovery after anthropogenic disturbances (Poff and Ward, 1990).

This paper presents a complete species list and summarizes distributional data for all aquatic taxa collected from pools and riffles at four sites along the upper reaches of the Werribee and Lerderderg Rivers from 1982 to 1984. Furthermore, each taxon was assigned to a functional feeding group (cf. Cummins and Klug, 1979; Hawkins and Sedell, 1981) because this classification can provide a useful basis for comparisons among studies involving different taxa or dealing with functional variation along river systems (Vannote et al., 1980; Marchant et al., 1985) or among sites (Bunn, 1986). We do not attempt to analyze statistically these data in this paper; such results were given in Boulton (1988).

## Study Area

Full details of the study sites were given by Boulton and Smith (1985) and Boulton and Lake (1990). Briefly, two study sites (upstream of the Werribee Picnic Spot (WPS), and Spargo Creek (SC)) were located on the upper reaches of the Werribee River, and two (Fireplace Ford (FF), and Wheeler Road (WR)) on the Lerderderg River. These rivers rise on the southern edge of the Great Dividing Range some 100 km NW of Melbourne, join near Bacchus Marsh and flow south-east to empty into Port Phillip Bay (Fig. 1 in Boulton and Lake, 1990). An annual average rainfall of 950 mm (Smith, 1976) falls on the catchment which is vegetated

by dry sclerophyll forest dominated by Manna Gum (*Eucalyptus viminalis* Labillard). Annual discharge reflects rainfall, peaking in spring, and ceasing in summer almost annually at the Werribee River sites and one year in three at the Lerderderg sites. Mean daily discharge is 24.2 Ml in the Werribee and 27.3 Ml in the Lerderderg River (Australian Water Resources Council, 1979) and highly variable (coefficient of variation of annual flow is 77% and 62% respectively (McMahon, 1979)).

The study commenced in a drought year, 1982. The Werribee River did not flow at all at the upstream site (SC) and only flowed for 5 months (late June to late November) at WPS. The study pool at WPS dried during the ensuing summer. In 1983, flow began in late May and continued for 7.5 months at both sites. At FF and WR, the Lerderderg began to flow in late May, 1982 and ceased in December. At WR, the study pool dried for six weeks that summer whereas at FF it shrank to a moist patch of leaves before refilling in mid-March. Flow resumed in May, 1983 and continued beyond the end of the study in March, 1984.

## Methods

### Sampling

Physicochemical data were collected each trip, and were discussed elsewhere (Boulton, 1988; Boulton and Lake, 1990). In 1982-1983, five 30-second sweep-net samples were taken in the pools using an FBA pond net (300  $\mu$ m mesh). While shuffling vigorously along the bottom of the pool, the pond net was swept from side to side across the disturbed path. When necessary, large wood fragments and cobbles retained in the net were thoroughly rinsed to remove clinging invertebrates before being discarded. Net contents were fixed in 5% formalin.

In adjacent riffles, five samples were collected using a Portable Invertebrate Sampler resembling that illustrated by Merritt and Cummins (1984). This device is a galvanized-iron box whose lower edges are lined with sponge rubber to ensure a seal with the uneven substratum. The upstream face of the box is removable, allowing water currents to flush the box contents into a collecting net (50  $\mu$ m mesh) attached to the downstream face. The sampler encloses 0.05 m<sup>2</sup>, exceeding the diameter of most rocks at the sites. The sampling plot was located using random numbers as co-ordinates, the sampler was placed carefully, and the box's contents agitated and scrubbed to a depth of 10 cm while the current washed suspended material and invertebrates into the collecting net. Samples were fixed in 5% formalin.

Often the current was insufficient to flush the box's contents into the collecting net or the water level was too low (< 5 cm) to flow into the box. This meant that the contents had to be manually scooped into the net - an inconsistent and unsatisfactory sampling method remedied by the development of a flow-independent pump sampler described by Boulton (1985). This device was used in 1983-1984 to collect four samples each from pool and riffle habitats at each site except SC where the pool was too deep (> 100 cm) for the sampler. A pilot study based on 40 samples (Boulton, 1988) confirmed that four samples sufficed to provide estimates of the abundances of the 15 most common taxa to within 40% of their means (cf. Elliott, 1977). For comparisons with pool samples collected during 1982, three sweep net samples were taken in each pool during 1983-1984. Fewer samples were collected when pools were smaller than normal (filling or drying) to avoid biases due to habitat disruption or artificial predation. During floods in September, 1983, pump samples could not be taken, necessitating four "kick samples" (Frost et al., 1971) instead.

In 1982, samples were taken approximately monthly (Table 1). As some taxa (e.g., Simuliidae, Chironomidae) can complete their aquatic stages in less than a month at high water temperatures (Chutter, 1968; Oliver, 1971), sampling frequency was increased to fortnightly in 1983-1984 (Table 1) to avoid missing these taxa. Taxonomy of larval Trichoptera and nymphal Ephemeroptera and

Plecoptera was aided by the collection of adult material from light traps and by regular sweep-netting over riparian vegetation.

### Laboratory processing

Preserved samples were washed through a nest of sieves with mesh sizes of 2 mm, 1 mm, and 300  $\mu$ m. Taxa retained by the two larger meshes were hand-sorted under 12 $\times$  magnification. Organisms retained by the 300  $\mu$ m mesh were separated from accompanying organic detritus using the kerosene-ethanol phase technique of Barmuta (1984). Macroinvertebrates were counted and identified as far as practicable using available keys and the voucher collection of the Museum of Victoria; most of the identifications were confirmed or carried out by a variety of experts (see Acknowledgements). Adults and larvae of some taxa (e.g., Elmidae, Hydrophilidae) were treated as separate entities because we were uncertain whether they were conspecific and in many cases they occupied different functional feeding groups.

Each taxon was assigned to a functional feeding group (*sensu* Cummins, 1975; Cummins and Klug, 1979) according to mouth-part morphology and feeding behaviour observed in the laboratory or reported in the literature. Additional information on dietary habits was provided by teasing out the foregut contents of at least 20 specimens of the more common species into polyvinyl lactophenol and comparing them with reference mounts of macerated wood, coarse particulate organic matter (CPOM), fine POM, periphyton, and fine inorganic material. No attempt was made to quantify dietary items (cf. Chessman, 1986). Animals using more than one mode of food collection (e.g., collector-shredder) were treated as separate functional groups because we deemed it unrealistic simply to divide the combination equally between constituent feeding modes (cf. Hawkins and Sedell, 1981). Several taxa were too rare to be unequivocally classified.

## Results

A total of 258 taxa was collected from pools and riffles at the four study sites in 1982-1984 (Table 2). Almost a quarter of these were Coleoptera while Diptera comprised just over a third of the total number of taxa (Table 3). Other species-rich groups included aquatic arachnids, Plecoptera, and Trichoptera. Four species of Anura (*Litoria ewingi* (Dumeril and Bibron); Hylidae; *Geocrinia victoriana* (Boulenger), *Neobatrachus sudelli* (Lamb), *Ranidella signifera* (Girard); Myobatrachidae) and two teleost fish (*Galaxias olidus* Günther; Galaxiidae and *Edelia ?obscura* (Klunzinger); Kuhliidae) were also recorded.

Most of the species were predators (Table 4). Collector-scrappers and collector-gatherers were also relatively diverse whereas few taxa were collector-filterers and collector-shredders (Table 4). Most of the individuals (chironomids, oligochaetes, mayfly and stonefly nymphs) collected during this study were collector-gatherers and collector-scrappers.

## Discussion

The large number of species of aquatic macroinvertebrates in these intermittent streams has been discussed elsewhere (Boulton and Suter, 1986; Boulton and Lake, 1988) and more recent studies in arid-zone streams in central Australia (Davis et al., in press) suggest that this phenomenon is widespread. The considerable habitat diversity offered by intermittent streams, coupled with the adaptations of many species (e.g., Towns, 1985; Boulton and Lake, 1988) to cope with a long history of aridity is probably responsible for such high species richness in these systems (Lake et al., 1986).

The higher species diversity found in pools (when equivalent numbers of samples were collected using a flow-independent sampling device) differs from the patterns observed in a review of 17 upland permanent streams in North America and the United Kingdom where numbers of taxa were similar between pools and riffles (Logan and Brooker, 1983). The greater species richness probably reflects the importance of pools in the Werribee and Lerderderg Rivers as over-summering refuges (Boulton, 1989).



Many of the species found in late summer are able to tolerate low dissolved oxygen levels or are air-breathing, and most are mobile (e.g., adult dytiscids) and able to escape when the pools dry. Relatively few taxa appear to be obligate inhabitants of intermittent streams; the majority are opportunistic generalists that also occur in nearby permanent streams (Boulton, 1988) or lentic waterbodies (e.g., Hemiptera, Coleoptera).

There are practical difficulties associated with assigning stream invertebrates to functional feeding groups because many of the animals appear to be opportunistic generalists that feed on a wide range of food resources. Diets also tend to change with age. For example, the stonefly *Illiesoperla australis* is a collector-gatherer in its early stages, switching to predation just before its final instars (Yule, 1990). Many taxa possess relatively undifferentiated mouth-parts, richly endowed with brushes and setae that confound attempts to classify them readily into feeding groups. Therefore, generalizations must be cautiously considered.

The high diversity of predators reflects the rich fauna of water mites, dytiscids, hemipterans, odonates, tanypods and other dipterans recorded in this study. The high species richness of predators in receding temporary waters has been reported elsewhere in Australia (Lake et al., 1989) and world-wide (Williams, 1987); densities tend to rise as pools dry up and prey become concentrated (Boulton, 1988; Lake et al., 1989). Most of the individuals collected from the Werribee and Lerderberg Rivers were collector-gatherers and collector-scrappers although these groups were only moderately diverse. This undoubtedly reflects the generalist feeding strategies discussed above, and reiterates the opportunistic nature of many of the lotic macroinvertebrates in these two intermittent streams.

#### Acknowledgements

Many people helped pump samples in the field; we especially thank Ros "Killer" St Clair. Other members of the Stream Group who helped us and discussed this research include Leon Barmuta, Sabine Schreiber, Nick O'Connor, Anthony Sokol, and Timothy Tams. Field equipment and avuncular guidance came from Darvyd Mortein.

We are especially grateful for the swift and careful taxonomic assistance graciously given by M.S. Harvey (Hydracarina), C.H.S. Waits (Dytiscidae), T. Weir (Elmidae), J.A. Davis (Psephenidae), J.F. Lawrence (other Coleoptera), G. Theischinger and C. Yule (Plecoptera), P.J. Suter (Ephemeroptera), D. Cartwright and J. Dean (Ephemeroptera, free-living larval Trichoptera), A. Neboiss (adult Trichoptera), A. Wells (Hydroptilidae), R. St Clair (Platyhelminthes, Leptoceridae, some Chironomidae), L. Metzeling (Tipulidae), B. Knott (Phreatoicidae), W.D. Williams (Amphipoda), P. Horwitz (Parastacidae), I. Lansbury (Hemiptera), J. Prince (Simuliidae), W. Ponder and B. Smith (Gastropoda), and A. Sokol (Anura). Richard Marchant, Peter Lillywhite, and Leon Metzeling kindly provided access to the voucher collection and laboratory facilities at the Museum of Victoria, and parted with chips and much practical and taxonomic advice on aquatic Diptera (especially the Nosebottidae).

Richard Marchant suggested this contribution, and we thank him for his critical comments on an earlier draft which was typed by Y.S. Lawson and Lorna Lucas, Zoology Department, University of Adelaide.

#### References

- Australian Water Resources Council 1979. *Stream Gauging Information*. (Fourth Edn). Australian Government Publishing Service: Canberra.
- Barmuta, L.A. 1984. A method for separating benthic arthropods from detritus. *Hydrobiologia* 112: 105-107.
- Boulton, A.J. 1985. A sampling device that quantitatively collects benthos in flowing or standing waters. *Hydrobiologia* 127: 31-39.
- Boulton, A.J. 1988. *Composition and Dynamics of Macroinvertebrate Communities in Two Intermittent Streams*. Ph.D. Thesis, Monash University, Victoria.
- Boulton, A.J. 1989. Over-summering refuges of aquatic macroinvertebrates in two intermittent streams in central Victoria. *Transactions of the Royal Society of South Australia* 113: 23-34.
- Boulton, A.J., and Smith, B.J. 1985. A range extension of the snail *Glacidorbis hedleyi* Iredale 1943 in Victoria. *Victorian Naturalist* 103: 123-126.
- Boulton, A.J., and Suter, P.J. 1986. Ecology of temporary streams - an Australian perspective. Pp. 313-29 in *Limnology in Australia*. (Eds De Deckker, P., and Williams, W.D.). CSIRO/Dr W. Junk: Melbourne and Dordrecht.
- Boulton, A.J., and Lake, P.S. 1988. Australian temporary streams - some ecological characteristics. *Verhandlungen Internationale Vereinigung für Theoretische und angewandte Limnologie*. 23: 1380-1383.
- Boulton, A.J., and Lake, P.S. 1990. The ecology of two intermittent streams in Victoria, Australia. I. Multivariate analyses of physicochemical features. *Freshwater Biology* 24: 123-141.
- Bunn, S.E. 1986. Spatial and temporal variation in the macroinvertebrate fauna of streams of the northern jarrah forest, Western Australia: functional organization. *Freshwater Biology* 16: 621-632.
- Chessman, B.C. 1986. Dietary studies of aquatic insects from two Victorian rivers. *Australian Journal of Marine and Freshwater Research* 37: 129-146.
- Chutter, F.M. 1968. On the ecology of the fauna of stones in the current in a South African river supporting a very large *Simulium* (Diptera) population. *Journal of Applied Ecology* 5:531-61.
- Cummins, K.W. 1975. Macroinvertebrates. Pp. 170-198 in *River Ecology*. (Ed. Whittton, B.A.). Blackwell Scientific Publishers: Oxford.
- Cummins, K.W., and Klug, M.J. 1979. Feeding ecology of stream invertebrates. *Annual Review of Ecology and Systematics* 10: 147-172.
- Dahm, C.N., and Molles, M.C. 1990. Will streams in semi-arid regions be sensitive harbingers of global climate change? *Bulletin of the North American Benthological Society* 7: 58.
- Davis, J.A., Harrington, S.A., and Friend, J.A. In press. Relict stream communities in the arid zone: the macroinvertebrate fauna of the George Gill Range, central Australia. *Australian Journal of Marine and Freshwater Research* 42.
- Elliott, J.M. 1977. *Some methods for the statistical analysis of samples of benthic invertebrates*. (Second Edn). Scientific Publication No. 25. Freshwater Biological Association: Ambleside.
- Finlayson, B.L., and McMahon, T.A. 1988. Australia vs. the world: A comparative analysis of streamflow characteristics. Pp. 17-40 in *Fluvial Geomorphology in Australia*. (Ed. Warner, R.F.). Academic Press: Sydney.
- Frost, S., Huni, A., and Kershaw, W.E. 1971. Evaluation of a kicking technique for sampling stream bottom fauna. *Canadian Journal of Zoology* 49: 167-173.
- Gore, J.A., Kelly, J.R., and Yount, J.D. 1990. Application of ecological theory to determining recovery potential of disturbed lotic ecosystems: research needs and priorities. *Environmental Management* 14: 755-762.
- Hawkins, C.P., and Sedell, J.R. 1981. Longitudinal and seasonal changes in functional organization of macroinvertebrate communities in four Oregon streams. *Ecology* 62: 387-397.
- Hynes, H.B.N. 1974. Comments on the taxonomy of Australian Austroperlidae and Gripopterygidae (Plecoptera). *Australian Journal of Zoology. Supplementary Series* 29: 1-36.
- Hynes, H.B.N. 1978. Annotated key to the stonefly nymphs (Plecoptera) of Victoria. *Australian Society of Limnology, Special Publication* 2: 1-63.
- Lake, P.S., Barmuta, L.A., Boulton, A.J., Campbell, I.C., and St Clair, R.M. 1986. Australian streams and Northern Hemisphere stream ecology: comparisons and problems. *Proceedings of the Ecological Society of Australia* 14: 61-82.
- Lake, P.S., Bayly, I.A.E., and Morton, D.W. 1989. The phenology of a temporary pond in western Victoria, Australia, with special reference to invertebrate succession. *Archiv für Hydrobiologie* 115: 171-202.
- Logan, P., and Brooker, M.P. 1983. The macroinvertebrate faunas of riffles and pools. *Water Research* 17: 263-270.
- Marchant, R., Metzeling, L., Graesser, A., and Suter, P. 1985. The organization of macroinvertebrate communities in the major tributaries of the LaTrobe River, Victoria, Australia. *Freshwater Biology* 15: 315-331.
- Marchant, R., Mitchell, P., and Norris, R. 1984. A distribution list for the aquatic invertebrates in the lowland region of the LaTrobe River, Victoria. *Occasional Papers from the Museum of Victoria* 1: 63-79.
- McMahon, T.A. 1979. Hydrological characteristics of Australian streams. *Civil Engineering Research Report, Monash University* 3/1979: 1-79.
- Merritt, R.W., and Cummins, K.W. 1984. *An Introduction to the Aquatic Insects of North America*. (Second Edn). Kendall/Hunt: Dubuque.
- Oliver, D.R. 1971. Life histories of the Chironomidae. *Annual Reviews in Entomology* 16: 211-230.
- Ponder, W.F. 1986. Mound springs of the Great Artesian Basin. Pp. 403-420 in *Limnology in Australia*. (Eds De Deckker, P., and Williams, W.D.). CSIRO/Dr W. Junk: Melbourne and Dordrecht.

- Smith, M.A. 1976. *Werribee River Basin - proposal for water resource management*. Report to State Rivers and Water Supply Commission, Melbourne, Victoria.
- St Clair, R.M. 1987. *The Leptoceridae of South-eastern Australia, with Emphasis on the Immature Stages*. Ph.D. Thesis, Monash University, Victoria.
- Theischinger, G. 1982. New and little known Dinotoperline stoneflies from Australia (Insecta: Plecoptera: Gripopterygidae). *Memoirs of the Queensland Museum* 20: 489-525.
- Theischinger, G. 1984. The species of the genus *Illiesoperla* McLellan (Insecta: Plecoptera: Gripopterygidae). *Australian Journal of Zoology* 32: 573-602.
- Towns, D.R. 1985. Limnological characteristics of a South Australian intermittent stream, Brown Hill Creek. *Australian Journal of Marine and Freshwater Research* 36: 821-837.
- Vannote, R.L., Minshall, G.W., Cummins, K.W., Sedell, J.R., and Cushing, C.E. 1980. The river continuum concept. *Canadian Journal of Fisheries and Aquatic Sciences* 37: 130-137.
- Wiggins, G.B., Mackay, R.J., and Smith, I.M. 1980. Evolutionary and ecological strategies of animals in annual temporary pools. *Archiv für Hydrobiologie, Supplement* 58: 97-206.
- Williams, D.D. 1987. *The Ecology of Temporary Waters*. Croom Helm: Kent.
- Williams, W.D. 1983. *Life in Inland Waters*. Blackwell Scientific Publishers: Carlton.
- Yule, C.M. 1990. The life cycle and dietary habits of *Illiesoperla mayi* Perkins (Plecoptera: Gripopterygidae) in Victoria, Australia. Pp. 71-80 in *Mayflies and Stoneflies: Life Histories and Biology*. (Ed. Campbell, I.C.). Kluwer: Dordrecht.

Table 1. Dates of sampling trips to the study sites during 1982-1984.

Month	1982	1983	1984
January		20	4, 18, 31
February		8	14, 25
March		8, 21, 29	23
April		5, 19, 30	
May	25	10, 24	
June	2-3, 27	7, 22	
July	8, 23	5, 19	
August	22	2, 16, 30	
September	13, 23-24	13, 27	
October	26	11, 25	
November	25	8, 24	
December	19, 23	7, 20	



Table 2. Aquatic macroinvertebrate taxa collected in pools (P) and riffles (R) at the four study sites on the Werribee and Lerderderg Rivers in 1982 ('82) and 1983-84 ('83). The collecting technique (SW = FBA kick-sweep sample, PS = pump sample, BS = box sample) and number of samples are listed below site (SC = Spargo Creek, WPS = Werribee River Picnic Spot, FF = Fireplace Ford, WR = Wheeler Road). Functional feeding groups abbreviated as follows: Cf = Collector-filterers, Cscr = Collector-scrapers, Cg = Collector-gatherers, Cshr = Collector-shredders, Pred = Predators (includes 'piercing' and 'engulfing' predators), Scr = Scrapers, Shr = Shredders, Gen = Generalist feeders, Nf = Nonfeeding stages, Un = Uncertain diet. NMV refers to the National Museum of Victoria voucher number.

[illegible]

Table 2 (continued)

Taxa	Functional Feeding Group	Werribee River								Lerderderg River							
		SC				WPS				FF				WR			
		'83	'83	'82	'83	'83	'82	'83	'82	'83	'83	'82	'83	'82	'83	'82	'83
		SW	PS	SW	SW	PS	BS	PS	SW	SW	PS	BS	PS	SW	SW	PS	BS
		54	75	58	74	89	28	88	58	75	92	36	92	58	77	93	36
		P	R	P	P	P	R	R	P	P	P	R	R	P	P	P	R
<b>BIVALVIA</b>																	
Sphaeriidae																	
<i>Sphaerium (Musculium)</i>																	
<i>tasmanicum</i> (Tenison-Woods)	Cf			x	x	x	x	x	x	x	x	x	x	x	x	x	x
<b>OLIGOCHAETA (includes</b>																	
Tubificidae, Lumbriculidae,																	
Enchytraeidae, Naididae,																	
Phreodrilidae, Haplotaxidae)	Cg	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<b>CRUSTACEA</b>																	
Syncarida																	
Koonungidae																	
<i>Koonunga</i> sp.	Cg							x									
Isopoda																	
Janiridae																	
<i>Heterias</i> sp.	Cg		x	x	x	x		x									
Phreatoicidae																	
<i>Crenoicus mixtus</i> Nicholls	Cshr			x	x	x	x	x			x	x		x	x	x	x
Amphipoda																	
Ceinidae																	
<i>Afrochiltonia australis</i> (Sayce)	Cshr		x	x	x	x	x	x			x			x		x	
Gammaridae																	
<i>'Niphargus'</i> sp.	Cshr		x		x					x	x		x				
Blind gammarid sp.	Cshr	x	x	x	x				x	x		x		x	x	x	
Decapoda																	
Atyidae																	
<i>Paratya australiensis</i> Kemp	Cshr			x	x												
Parastacidae																	
<i>Cherax destructor</i> Clark	Shr			x	x	x	x										
<i>Engaeus setimerus</i> Horwitz	Shr	x		x	x	x											
<b>ARACHNIDA</b>																	
Hydracarina																	
Eylaidae																	
<i>Eylais</i> sp.	Pred											x					
Hydryphantidae																	
<i>Tartarothyas boultoni</i> Harvey	Pred	x			x	x	x	x			x				x		
<i>Diplodontus</i> sp.	Pred			x													
Limnesiidae																	
<i>Limnesia</i> spp.	Pred	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x
Interstitial <i>Limnesia</i> sp.	Pred								x								



Table 2 (continued)

Taxa	Functional Feeding Group	Werribee River								Lerderderg River							
		SC		WPS				FF				WR					
		'83	'83	'82	'83	'83	'82	'83	'82	'83	'83	'82	'83	'82	'83	'82	'83
		SW	PS	SW	SW	PS	BS	PS	SW	SW	PS	BS	PS	SW	SW	PS	BS
		54	75	58	74	89	28	88	58	75	92	36	92	58	77	93	36
		P	R	P	P	P	R	R	P	P	P	R	R	P	P	P	R
<b>Hygrobatidae</b>																	
<i>Hygrobat</i> sp.	Pred	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Australiobates</i> spp.	Pred	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Corticacarus</i> spp.	Pred	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Aspidiobates</i> sp.	Pred	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Gondwanabates</i> sp.	Pred																x
<b>Pionidae</b>																	
<i>Piona ?uncatiformis</i> Lundblad	Pred			x	x		x		x								
<b>Aturidae</b>																	
<i>Frontipodopsis</i> sp.	Pred											x	x				
<i>'Notoaturus'</i> sp.	Pred	x	x		x	x		x	x	x	x	x	x	x		x	x
<b>Arrenuridae</b>																	
<i>Arrenurus</i> sp.	Pred	x			x	x	x										
<b>Mesostigmata</b>																	
Aquatic species 1	Pred				x	x	x		x							x	
Aquatic species 2	Pred	x			x	x	x	x	x	x		x				x	x
Aquatic species 3	Pred				x	x									x	x	
<b>INSECTA</b>																	
<b>Ephemeroptera</b>																	
<b>Baetidae</b>																	
<i>Pseudocloeon</i> sp.	Cscr	x	x		x	x		x				x			x	x	x
<b>Leptophlebiidae</b>																	
<i>Atalophlebia</i> sp. (nr <i>albiterminata/tuhla/hudsoni</i> <sup>1</sup> )	Cscr	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Nousia</i> spp. (N. nr <i>inconspicua</i> - Werribee R., N. nr <i>fuscata</i> - Lerderderg R. <sup>1</sup> )	Cscr	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Jappa</i> sp.	Cscr								x	x					x	x	
<b>Odonata</b>																	
<b>Zygoptera</b>																	
<b>Lestidae</b>																	
<i>Austrolestes</i> ?io (Selys)	Pred	x		x	x	x	x	x								x	
<b>Amphipterygidae</b>																	
<i>Diphlebia</i> sp.	Pred			x							x				x		
<b>Anisoptera</b>																	
<b>Aeschnidae</b>																	
<i>Austroaeschna</i> ?parvistigmata																	
Martin	Pred								x			x					

Table 2 (continued)

Taxa	Functional Feeding Group	Werribee River								Lerderderg River									
		SC				WPS				FF					WR				
		'83	'83	'82	'83	'83	'82	'83	'82	'83	'83	'82	'83	'82	'83	'83	'82	'83	'83
		SW	PS	SW	SW	PS	BS	PS	SW	SW	PS	BS	PS	SW	SW	PS	BS	PS	PS
		54	75	58	74	89	28	88	58	75	92	36	92	58	77	93	36	92	
		P	R	P	P	P	R	R	P	P	P	R	R	P	P	P	R	R	
<hr/>																			
Synthemidae																			
<i>Synthemis</i> sp.	Pred	x			x	x		x		x	x						x		
Corduliidae																			
<i>Hemicordulia</i> ?tau Selys	Pred			x	x	x													
Plecoptera																			
Austroperlidae																			
<i>Austroperlina victoria</i> Illies	Cshr								x	x	x	x	x	x	x	x	x	x	x
<i>Acruroperla atra</i> (Samal)	Shr								x	x	x		x		x	x	x	x	x
Notonemouridae																			
<i>Austrocercia tasmanica</i> (Tillyard)	Cshr	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Gripopterygidae																			
<i>Illiesoperla australis</i> (Tillyard) <sup>2</sup>	Cg	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Newmanoperla thoreyi</i> McLellan	Cscr	x	x																
<i>Leptoperla bifida</i> McLellan	Cscr	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Leptoperla</i> sp.	Cscr	x	x		x	x		x		x	x				x	x			
<i>Riekoperla rugosa</i> (Kimmins)	Cscr	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>R. tuberculata</i> McLellan	Cscr					x		x			x	x	x		x		x	x	
<i>R. karki-reticulata</i> group <sup>3</sup>	Cscr	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Trinotoperla montana</i> (Riek) <sup>4</sup>	Scr				x	x		x	x	x	x	x	x		x	x	x	x	
<i>Dinotoperla fontana</i> Kimmins	Cscr	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>D. thwaitesi</i> Kimmins	Cscr	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>D. eucumbene</i> McLellan	Cshr										x	x	x						
<i>D. brevipennis</i> Kimmins	Cscr	x	x		x		x	x		x	x	x	x	x		x	x	x	
Heteroptera																			
Gerridae																			
<i>Rheumatometra philarete</i> Kirkaldy	Pred													x					
Veliidae																			
<i>Microvelia dubia</i> Hale	Pred	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>M. distincta</i> Malipatil	Pred	x		x	x	x	x		x	x				x	x				
Notonectidae																			
<i>Enithares woodwardi</i> Lansbury	Pred	x		x					x	x									
<i>Anisops deanei</i> Brooks	Pred	x		x	x				x	x				x	x				
<i>A. thackeri</i> Brooks	Pred			x	x									x	x				
Corixidae																			
<i>Micronecta annae illiesi</i> Wróblewski	Cg	x	x	x	x	x			x	x	x			x	x	x			x
<i>M. a. tasmanica</i> Wróblewski	Cg				x	x			x						x	x			



Table 2 (continued)

Taxa	Functional Feeding Group	Werribee River								Lerderderg River								
		SC		WPS						FF				WR				
		'83	'83	'82	'83	'83	'82	'83	'82	'83	'83	'82	'83	'82	'83	'82	'83	
		SW	PS	SW	SW	PS	BS	PS	SW	SW	PS	BS	PS	SW	SW	PS	BS	PS
		54	75	58	74	89	28	88	58	75	92	36	92	58	77	93	36	92
		P	R	P	P	P	R	R	P	P	P	R	R	P	P	P	R	R
<i>Sigara (Tropocorixa)</i>																		
<i>truncatipala</i> (Hale)	Cg	x		x	x	x			x	x				x	x			
Megaloptera																		
Corydalidae																		
<i>Protochauiodes</i> sp.	Pred													x				
Coleoptera <sup>5</sup>																		
Noteridae																		
Unidentified larvae																		
(Watts, pers. comm., 4.2.85)	Pred								x									
Dytiscidae																		
<i>Antiporus blakei</i> (Clark)	Pred	x		x	x	x	x		x	x	x		x	x		x		
<i>A. femoralis</i> (Boheman)	Pred	x		x	x	x			x	x	x			x	x	x		
<i>Antiporus</i> spp. larvae	Pred	x		x	x	x	x		x	x	x				x	x		
<i>Australphilus saltus</i> Watts	Pred				x				x	x				x	x			
<i>Australphilus</i> sp. larvae	Pred				x	x		x		x				x	x	x		x
<i>Chostonectes gigas</i> (Boheman)	Pred								x					x	x			
<i>C. johnsoni</i> (Clark)	Pred	x		x	x	x	x		x	x	x	x		x	x	x		
<i>Chostonectes</i> spp. larvae	Pred	x	x	x	x	x	x	x	x	x	x		x		x	x	x	x
<i>Copelatus australiae</i> Clark	Pred	x	x		x		x							x				
<i>Copelatus</i> sp. larvae	Pred	x			x										x			
<i>?Hydaticus</i> sp. larvae	Pred														x	x		
<i>Hyderodes schuckardi</i> Hope	Pred	x				x												
<i>Lancetes lanceolatus</i> (Clark)	Pred	x	x	x	x			x	x		x			x	x	x		
<i>Lancetes</i> sp. larvae	Pred	x	x		x	x	x	x		x	x				x	x	x	x
<i>Liodesuss schuckardi</i> (Clark)	Pred	x		x	x	x	x	x	x	x	x		x	x	x	x	x	x
<i>Megaporus hamatus</i> (Clark)	Pred	x			x	x												
<i>Necterosoma penicillatum</i>																		
(Clark)	Pred	x		x	x	x	x	x	x	x	x			x	x	x	x	x
<i>Necterosoma</i> sp. larvae	Pred	x	x	x	x	x	x	x	x	x	x		x	x	x	x		
<i>Platynectes decempunctatus</i>																		
(Fabricius)	Pred	x	x	x	x	x									x			x
<i>Platynectes</i> sp. larvae	Pred	x	x		x											x		
<i>Rhantus suturalis</i> (Macleay)	Pred	x		x		x			x	x	x			x	x	x		
<i>Sternopriscus hansardi</i> (Clark)	Pred	x		x														
<i>S. multimaculatus</i> (Clark)	Pred									x								
<i>S. mundanus</i> Watts	Pred	x		x	x	x	x		x	x	x	x		x	x	x	x	x
<i>Sternopriscus</i> sp.	Pred															x		
<i>?Eretes</i> sp. larvae	Pred				x	x												
<i>?Rhantus</i> sp. larvae	Pred	x		x	x	x									x	x		
Gyrinidae																x		
<i>Aulonogyrys strigosus</i> Guérin	Pred									x								
<i>Macrogyrus</i> sp.	Pred													x	x			

Table 2 (continued)

Taxa	Functional Feeding Group	Werribee River								Lerderderg River										
		SC		WPS						FF					WR					
		'83	'83	'82	'83	'83	'82	'83	'82	'83	'83	'82	'83	'82	'83	'83	'82	'83	'82	'83
		SW	PS	SW	SW	PS	BS	PS	SW	SW	PS	BS	PS	SW	SW	PS	BS	PS	BS	PS
		54	75	58	74	89	28	88	58	75	92	36	92	58	77	93	36	92		
		P	R	P	P	P	R	R	P	P	P	R	R	P	P	P	R	R		
<hr/>																				
Gyrinidae sp. larvae	Pred															x	x			
Hydraenidae																				
<i>Hydraena tambiflagellata</i>																				
Zwick	Cscr		x			x	x									x	x			
<i>H. luridipennis</i> Macleay	Cscr	x			x	x	x		x	x	x			x	x	x			x	
<i>H. ?tricantha</i> Zwick	Cscr	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
<i>Hydraena</i> sp.	Cscr		x		x	x							x			x			x	
<i>Ochthebius</i> sp. 1	Cscr			x																
<i>Ochthebius</i> sp. 2	Cscr	x			x				x						x			x		
<i>Ochthebius</i> sp. 3	Cscr	x			x	x		x			x		x					x		
Hydrochidae																				
<i>Hydrochus</i> sp. 1	Cscr				x					x										
<i>Hydrochus</i> sp. 2	Cscr		x											x						
Hydrophilidae																				
<i>Berosus</i> sp.	Cscr	x			x						x		x							
<i>Berosus</i> sp. larvae	Pred				x						x									
<i>Enochrus</i> sp.	Cscr				x									x						
<i>Helochaeres australis</i> Blackburn	Cscr	x			x					x						x				
<i>Limnoxenus zeelandicus</i> (Broun)	Cscr		x		x				x					x						
<i>Paracymus pygmaeus</i> (Macleay)	Cg	x	x	x	x	x		x	x	x	x	x		x	x	x	x			
<i>Paracymus</i> sp. larvae	Pred	x			x	x				x	x	x	x		x			x		
<i>Paranacaena lindi</i> Blackburn	Cg	x	x	x	x									x	x	x				
Helodidae																				
Helodid sp. 1 larvae	Cg													x			x			
Helodid sp. 2 larvae	Cg	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	
Helodid sp. 3 larvae	Cg									x	x			x	x	x			x	
Helodid sp. 4 larvae	Cg											x				x				
Helodid sp. 5 larvae	Cg				x		x													
?Limnichidae sp.	Cg		x											x						
Psephenidae																				
<i>Sclerocyphon striatus</i>																				
Lea larvae	Scr				x	x	x	x	x	x	x	x	x	x		x	x	x	x	
Ptilodactylidae sp. larvae	Shr								x	x	x	x	x		x	x	x	x		
Elmidae																				
<i>Austrolimnius (Tiphonaetes)</i>																				
<i>hebrus</i> (Hinton)	Scr		x					x	x	x	x	x	x				x	x	x	
<i>A. (Limnelmis) maro</i> Hinton	Scr							x		x	x	x	x	x	x		x	x	x	
<i>A. (L.) miletus</i> Hinton	Scr										x	x	x				x	x	x	
<i>A. "mormo"</i> larvae	Scr	x			x			x	x	x	x	x	x					x	x	
<i>Austrolimnius</i> sp. larvae	Scr								x	x	x	x	x				x	x	x	



Table 2 (continued)

Taxa	Functional Feeding Group	Werribee River								Lerderderg River							
		SC		WPS						FF			WR				
		'83	'83	'82	'83	'83	'82	'83	'82	'83	'83	'82	'83	'82	'83	'82	'83
		SW	PS	SW	SW	PS	BS	PS	SW	SW	PS	BS	PS	SW	SW	PS	BS
		54	75	58	74	89	28	88	58	75	92	36	92	58	77	93	36
		P	R	P	P	P	R	R	P	P	P	R	R	P	P	P	R
<hr/>																	
<i>Notriolus quadriplagiatus</i> Carter	Cscr		x	x	x	x	x	x			x	x	x				
<i>N. quadriplagiatus</i> larvae	Cscr			x	x	x		x									
<i>Simsonia tasmanica</i> (Blackburn)	Cscr								x	x	x	x	x				
<i>S. tasmanica</i> larvae	Cscr								x	x	x	x	x				x
<i>Kingolus</i> sp. larvae (NMV sp. I)	Cscr								x							x	
<hr/>																	
Mecoptera																	
Nannochoristidae																	
<i>Nannochorista</i> sp.	Pred												x				
<hr/>																	
Diptera																	
Tipulidae																	
<i>Cryptolabis</i> sp. (nr NMV sp. 4)	Cg													x	x	x	x
<i>Ctenophora</i> sp.	Shr	x	x								x						x
<i>Dactylolabis</i> sp.	Pred										x		x				
<i>Hexatoma</i> nr <i>megacera</i>																	
(nr NMV sp. 39)	Pred		x	x	x	x		x									
<i>Hexatoma</i> sp. 1 (nr NMV sp. 24)	Pred			x	x									x	x	x	
<i>Hexatoma</i> sp. 2 (nr NMV sp. 45)	Pred		x										x				
<i>Limnophila</i> sp. 1 (nr NMV sp. 1)	Pred									x					x		
<i>Limnophila</i> sp. 2	Pred		x	x	x	x	x		x	x	x	x		x		x	x
<i>Limonia</i> sp. 1 (NMV sp. 3)	Cg		x		x			x		x			x		x	x	x
<i>Limonia</i> sp. 2	Cg			x			x				x	x	x			x	x
<i>Ormosia</i> sp. (NMV sp. 5)	Cshr	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Oropeza</i> sp. 1	Shr												x				
<i>Oropeza</i> sp. 2	Shr		x		x	x	x	x							x	x	
<i>Tipula</i> sp. 1	Cg					x		x									x
<i>Tipula</i> sp. 2	Pred	x	x		x	x	x	x			x	x	x	x	x	x	x
Tipulidae sp. 1	Cg									x			x				
Tipulidae sp. 2	Pred						x	x									
Tipulidae sp. 3	Cg															x	x
<hr/>																	
Psychodidae																	
<i>Maruina</i> sp.	Cscr			x		x						x	x			x	x
<i>Psychoda</i> sp. (NMV sp. 3)	Cg	x	x		x	x	x	x	x	x	x	x	x		x	x	x
<hr/>																	
Dixidae																	
<i>Dixa</i> sp. (NMV sp. 1)	Cg				x	x	x			x	x	x		x	x	x	x
<hr/>																	
Culicidae																	
<i>Aedes</i> sp. 1	Cf	x		x	x	x			x	x	x			x	x	x	x
<i>Aedes</i> sp. 2	Cf	x			x	x			x	x	x			x	x	x	
<i>Anopheles annulipes</i> Walker	Cf	x		x	x					x		x		x	x	x	
<i>Culex australicus</i> Skuse	Cf	x		x					x	x					x	x	
<i>C. annulirostris</i> Skuse	Cf	x		x			x			x				x	x	x	
<i>C. fatigans</i> Weidmann	Cf				x					x	x			x	x	x	

[illegible]



Table 2 (continued)

Taxa	Functional Feeding Group	Werribee River								Lerderderg River								
		SC				WPS				FF				WR				
		'83	'83	'82	'83	'83	'82	'83	'82	'83	'83	'82	'83	'82	'83	'83	'82	'83
		SW	PS	SW	SW	PS	BS	PS	SW	SW	PS	BS	PS	SW	SW	PS	BS	PS
		54	75	58	74	89	28	88	58	75	92	36	92	58	77	93	36	92
		P	R	P	P	P	R	R	P	P	P	R	R	P	P	P	R	R
<i>Cricotopus</i> complex																		
(includes NMV spp. 160E, 12E) <sup>6</sup>																		
	Cscr	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
nr <i>Brillia</i> sp. 1	Cg	x			x	x	x	x	x	x	x	x	x	x	x	x	x	x
nr <i>Brillia</i> sp. 2	Cg	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x
<i>Heterotrissocladius</i> sp.	Cg	x	x	x	x	x	x	x	x	x	x		x		x	x	x	x
<i>Corynoneura</i> sp.	Cscr								x	x						x		
<i>Stictocladius</i> sp. 1 (NMV sp. 9E)	Cscr		x			x	x	x		x	x	x	x			x	x	x
nr <i>Cordites</i> sp.	Cscr	x	x		x		x	x		x	x	x	x		x	x		x
<i>Rheocricotopus</i> sp.																		
(NMV sp. 91E)	Cg								x	x					x			
<i>Thienemanniella</i> sp.																		
(NMV sp. 10E)	Cg						x											
Orthoclaudiinae sp. 1	Cscr	x	x		x	x	x	x		x	x			x	x	x		
Orthoclaudiinae sp. 2	Cscr	x															x	x
Orthoclaudiinae sp. 3	Cscr		x															
Orthoclaudiinae sp. 4	Cscr																x	
Orthoclaudiinae sp. 5	Cscr		x						x									
Orthoclaudiinae sp. 6																		
(NMV sp. 34E)	Cg			x	x	x	x		x	x	x	x		x	x	x		
Aphroteniinae																		
Aphroteniella sp.(nr NMV sp. 18E)	Pred									x	x	x	x	x	x	x	x	x
Ceratopogonidae																		
<i>Atrichopogon</i> sp.	Cscr	x	x		x	x		x							x			x
<i>Bezzia</i> sp.	Pred	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x
<i>Culicoides</i> sp. 1	Pred	x	x			x		x										
<i>Culicoides</i> sp. 2	Pred							x										
<i>Dasyhelea</i> sp.	Cg		x	x	x	x	x	x		x			x			x		x
<i>Forcipomyia</i> sp.	Cscr	x	x	x	x			x	x	x	x		x					
<i>Monhelea</i> sp.	Pred		x	x	x	x	x	x						x	x		x	
<i>Nilobezzia</i> sp.	Pred		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Simuliidae																		
All taxa listed below were "lumped" in this study																		
<i>Austrosimulium furiosum</i> (Skuse)																		
<i>A. victoriae</i> (Roubaud)																		
<i>Austrosimulium</i> nr sp. Y <sup>7</sup>																		
<i>Austrosimulium</i> sp. (nr <i>victoriae</i> )																		
? " <i>Cnephia</i> " <i>umbratorum</i> <sup>8</sup>	Cf	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x
Thaumaleidae																		
Thaumaleidae sp.	Scr			x	x	x			x	x								x

Taxa	Functional Feeding Group	Werribee River								Lerderderg River								
		SC				WPS				FF					WR			
		'83 SW 54 P	'83 PS 75 R	'82 SW 58 P	'83 SW 74 P	'83 PS 89 P	'82 BS 28 R	'83 PS 88 R	'82 SW 58 P	'83 SW 75 P	'83 PS 92 P	'82 BS 36 R	'83 PS 92 R	'82 SW 58 P	'83 SW 77 P	'83 PS 93 P	'82 BS 36 R	'83 PS 92 R
Tabanidae																		
<i>Tabanidae</i> sp. 1	Pred											x	x					x
<i>Tabanidae</i> sp. 2	Pred											x					x	
Stratiomyidae																		
<i>Stratiomyidae</i> spp.	Cg	x	x		x	x	x	x		x		x	x		x	x		x
Empididae																		
<i>Empididae</i> sp. 1	Pred	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Empididae</i> sp. 2	Pred	x	x		x		x	x	x	x	x	x	x	x	x	x	x	x
Dolichopodidae																		
<i>Dolichopodidae</i> sp.	Pred	x	x		x	x		x		x			x	x	x	x		x
Sciomyzidae																		
<i>Sciomyzidae</i> sp.	Pred			x		x									x			
Ephydridae																		
<i>Ephydridae</i> sp.	Cg						x											
Muscidae																		
<i>Muscidae</i> sp. 1	Pred	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Muscidae</i> sp. 2	Pred					x	x	x	x	x					x	x		x
<i>Muscidae</i> sp. 3	Pred	x	x		x	x	x	x	x	x	x	x	x	x	x	x		x
Trichoptera																		
Hydrobiosidae																		
<i>Apsilochorema gisburni</i> (Mosely)	Pred		x		x			x			x		x			x		x
<i>A. obliquum</i> (Mosely)	Pred								x		x	x	x			x	x	x
<i>Ptychobiosis nigrata</i> (Banks)	Pred									x	x	x	x		x	x	x	x
<i>Taschorema</i> sp. (? <i>evansi</i> )	Pred		x		x	x	x	x		x	x	x	x			x	x	x
Glossosomatidae																		
<i>Agapetus</i> spp. (includes sp. 7 <sup>9</sup> )	Ser		x				x	x		x	x	x	x		x	x	x	x
Hydroptilidae																		
<i>Hellyethira ?simplex</i> (Mosely)	Ser	x	x	x	x	x	x	x		x	x	x	x	x	x	x		x
<i>Maydenoptila</i> sp.	Ser	x			x	x		x										
<i>Oxyethira columba</i> (Neboiss)	Ser					x		x										
Philopotamidae																		
<i>Hydrobiosella</i> sp.	Cf												x					
Hydropsychidae																		
<i>Cheumatopsyche</i> sp. 3 <sup>9</sup>	Cf									x								
Polycentropodidae																		
<i>Plectrocnemia</i> sp.	Pred					x						x					x	
Ecnomidae																		
<i>Ecnomus rusellius</i> Neboiss	Pred				x			x		x								



Table 2 (continued)

Taxa	Functional Feeding Group	Werribee River								Lerderderg River								
		SC				WPS				FF			WR					
		'83 SW 54 P	'83 PS 75 R	'82 SW 58 P	'83 SW 74 P	'83 PS 89 P	'82 BS 28 R	'83 PS 88 R	'82 SW 58 P	'83 SW 75 P	'83 PS 92 P	'82 BS 36 R	'83 PS 92 R	'82 SW 58 P	'83 SW 77 P	'83 PS 93 P	'82 BS 36 R	'83 PS 92 R
Calocidae																		
<i>Coenota plicata</i> Mosely	Shr								x	x		x				x		x
Calocidae sp. 1	Shr					x			x	x	x	x	x	x	x	x	x	x
Atriplectididae																		
<i>Atriplectides dubius</i> Mosely	Cg										x	x		x				x
Philorheithridae																		
<i>Austrheithrus</i> sp.	Pred											x					x	
Helicopsychidae																		
? <i>Helicopsyche</i> sp.	Scr			x			x		x	x	x	x	x	x	x	x	x	x
Calamoceratidae																		
<i>Anisocentropus</i> sp.	Shr													x				
Leptoceridae																		
<i>Leptorussa darlingtoni</i> (Banks)	Cscr	x		x					x	x	x		x	x	x	x	x	x
<i>Oecetis</i> sp.	Pred	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Triaenodes</i> sp.																		
(NMV sp. PT773)	Shr			x	x	x	x	x										
<i>Lectrides varians</i> Mosely	Shr			x					x	x	x			x	x	x		
<i>Notalina bifaria</i> Neboiss	Cshr				x												x	
<i>N. spira</i> St Clair	Cshr					x												x
<i>Triplectides ciuskus ciuskus</i>																		
Mosely	Shr			x					x	x	x		x	x	x	x		x
<i>T. similis</i> Mosely	Shr			x	x		x		x	x	x		x	x	x	x	x	x
<i>T. truncatus</i> Neboiss	Shr								x	x	x	x		x	x	x	x	x
Lepidoptera																		
Pyralidae sp.	Shr	x	x	x	x	x				x								x

<sup>1</sup> Dr P.J. Suter (pers. comm. 17.7.85) believes that the species of *Atalophlebia* and the species of *Nousia* is probably new because the adult genitalia are quite distinctive. They most resemble those named species in parentheses. *N. inconspicua* is now named *Koorrnonga inconspicua* (Dr R. Marchant, pers. comm. 18.4.91).

<sup>2</sup> Mr G. Theischinger (pers. comm. 14.5.85) identified these specimens as *Illiesoperla* (*Illiesoperla*) *mayi* (Perkins), a species earlier synonymized with *I. australis* by Hynes (1974). Theischinger (1982) reinstated *I. mayi* as a species clearly distinct from *I. australis* and illustrated some of the larval features (Theischinger 1984) associated with the adult after breeding out. The validity of the specific status of *I. mayi* is in doubt (C. M. Yule, pers. comm.) and a conservative approach, retaining the original name *Illiesoperla australis*, has been adopted here.

- <sup>3</sup> Of the four species that comprise this complex (Hynes 1978), only *Riekoperla williamsi* McLellan occurred in collections of adults examined by Mr G. Theischinger (pers. comm., 14.5.85). Other adults, that could not be matched with nymphs, were *R. naso* Theischinger and *R. triloba triloba* McLellan and it is likely that the nymphs of these species were included in counts of nymphs assigned to the *R. karki-reticulata* complex. Difficulty was encountered separating some *R. rugosa* nymphs from those of the *R. karki-reticulata* complex. These may have been the nymphs of *R. naso*, a species found co-occurring with the closely related *R. rugosa* for the first time in Australia in this study (G. Theischinger pers. comm. 14.5.85).
- <sup>4</sup> Ms C.M. Yule (pers. comm. 18.2.84) states that this is the correct name for adults and nymphs previously assigned to *Trinotoperla yeoi* Perkins.
- <sup>5</sup> Unless otherwise indicated, all these beetles were adults.
- <sup>6</sup> The *Cricotopus* complex is made up of at least seven different chironomid species whose characteristics are difficult to distinguish, especially when the mouth-parts are worn. As they all appear to share a similar diet, they have been lumped in this study.
- <sup>7</sup> *Austrosimulium* nr sp. Y follows the name used in Ms J. Prince's collection.
- <sup>8</sup> "*Cnephia*" definitely is not in the genus *Cnephia* although that is the name currently used (Ms J. Prince pers. comm. 7.8.84).
- <sup>9</sup> These numbers refer to the voucher specimens held in the MMBW collection of Mr J. Dean and Mr D. Cartwright.



Table 3. Numbers and percentage composition of aquatic macroinvertebrate taxa in major groups collected from pools and riffles at four study sites on the Werribee and Lerderderg Rivers in 1982–1984.

Taxon	Total	Percentage
Mollusca	6	2.32
Other non-arthropods	7	2.71
Crustacea	9	3.49
Arachnida	17	6.59
Ephemeroptera	5	1.94
Odonata	5	1.94
Plecoptera	15	5.81
Hemiptera	9	3.49
Coleoptera	64	24.81
Non-chironomid Diptera	52	20.16
Chironomidae	37	14.34
Trichoptera	29	11.24
Other insects	3	1.16
Total	258	

Table 4. Numbers and percentage composition of taxa in several functional feeding groups.

Taxon	Total	Percentage
Predators	101	39.15
Collector-scrappers	49	18.99
Collector-gatherers	43	16.67
Scrappers	17	6.59
Shredders	17	6.59
Collectors-filterers	15	5.81
Collector-shredders	12	4.65
Others	4	1.55





# Plecoptera, Ephemeroptera and Trichoptera of the Pelion Valley, Tasmanian World Heritage Area

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Abstract. Dean, J.C. and Cartwright, D.I. 1992. Plecoptera, Ephemeroptera and Trichoptera of the Pelion Valley, Tasmanian World Heritage Area. *Occasional Papers from the Museum of Victoria* 5: 73-79.

A survey of the Pelion Valley yielded eighty species of aquatic insects, consisting of seventeen species of stoneflies, thirteen species of mayflies and fifty species of caddisflies. Most species featured orderly distribution patterns along the river continuum, and several examples of spatial separation of congeners are reported. There was an obvious trend of increasing species richness as one moved from small headwater streams to larger downstream sites. The Lake Ayr outlet stream was unique in yielding a number of species which are widely distributed at lower altitudes, and their presence in the study area can probably be attributed to benign physical conditions at that site. There was no evidence of endemism among the aquatic insects we collected. With a single exception, there are extensive records from elsewhere in Tasmania of all the species we have identified. The exception is the stonefly *Eusthenia reticulata*, which has seldom been collected and is apparently a rare species (Hynes, 1989). Its collection from Douglas Creek is significant. The status of species we are unable to identify is unknown. These include most of the mayflies and some caddisflies, and highlights the need for basic taxonomic investigations of these groups.

## Introduction

Running water communities worldwide are usually dominated by aquatic insects. In terms of species richness and abundance, the Orders Plecoptera, Diptera, Ephemeroptera and Trichoptera are prominent. This report presents the results of a survey of three of these: Orders Plecoptera (stoneflies), Ephemeroptera (mayflies) and Trichoptera (caddisflies), in the Mount Ossa - Pelion Valley area of the Cradle Mountain - Lake St Clair National Park.

Cradle Mountain - Lake St Clair National Park is an extensive reserve which forms the northern boundary of the Tasmanian World Heritage Area. Access to most of the country within the Park is relatively difficult, and the area has not previously been surveyed for aquatic insects. Neboiss et al. (1988) have reported on the caddisflies of the extreme northern and southern ends of the Park, but pointed out that "the greatest and most exciting part of the Park from Cradle Mountain to Lake St Clair still remains unexplored as far as the aquatic insects (Trichoptera) are concerned". Limited collections of Plecoptera and Ephemeroptera have also been made in accessible parts of the Park, especially near Cradle Mountain. These collections have been far from comprehensive, and have only been reported as locality records for a few species in the taxonomic literature.

The results presented below are based on a series of

samples collected in mid-January 1990. Limited time was available for sampling at each location and, although taxa lists are extensive, it is likely that they include only the more common species from the survey area. In addition, species with life histories characterised by an absence of nymphs or larvae from streams in summer are unlikely to have been collected.

## Methods

### Sampling

Samples were collected from seventeen locations (Figure 1). With the exceptions of sites 1 and 6, these were all running water sites, ranging from first order headwater streams to larger third order streams (see Appendix).

Aquatic stages were primarily collected using a kick sampling technique. Bottom sediments were vigorously disturbed, either by foot or by overturning larger rocks and woody substrates. The dislodged fine material was collected in a downstream pond net, transferred to a large white tray, and individual insects picked from the debris using forceps. Larvae and pupae were also handpicked directly from the surfaces of larger rocks and solid substrates.

Adults were collected by sweeping riparian vegetation with hand nets. Battery operated light traps were employed after dark, although with limited success.

### Taxonomy

The Tasmanian stoneflies are taxonomically well known. Material collected during the present study has been identified using keys to adults and nymphs (Hynes, 1989).

By contrast, the taxonomy of Tasmanian mayflies is very incomplete. Adults of fifteen species have been described from the state (Tillyard, 1936; Harker, 1954, 1957), but descriptions of many of these are inadequate for identification of collected material. This problem is compounded by the presence of an unknown number of undescribed species. Although taxonomy of the nymphs is an even more parlous state, we have concentrated our efforts on this stage. All specimens have been identified to genus using the keys of Suter (1979) and Dean (1989), and we have allocated voucher numbers to distinguish presumptive species. A voucher collection has been maintained for several years in Victoria, and the Tasmanian material has now been incorporated into this. Formal identification must, however, await a revision of the adults and the rearing of nymphs.

While adult taxonomy of the Tasmanian Trichoptera is well advanced, primarily due to the efforts of Neboiss (1977, 1986), little published information is available on immature stages. Despite this, we have been able to identify most of the larvae collected. Over the past ten years, we have accumulated a large amount of larval and reared material from both Tasmania and the mainland, and this unpublished information has been augmented with reared material collected during the present study. Larval taxonomy of the families Conoesucidae, Calocidae and Helicophidae is currently being investigated by Jean Jackson at the University of Tasmania, and she has kindly identified some of our material in these families.

### Distribution and abundance

Included in the species lists are assessments of the distribution and abundance of each taxa. These assessments are based solely on the set of samples which we have collected, and give an indication of relative rather than absolute abundance. The status of individual taxa would be likely to change if sampling intensity was increased, or if samples were collected at other times of the year. Categories we have adopted are:

Restricted distribution: recorded from 1 or 2 sites only.

Limited distribution: recorded from 3 or 4 sites.

Widespread distribution: recorded from 5 or more sites.

Rare species: a total of 1-3 specimens collected from all sites.

Common species: a total of 4-30 specimens collected from all sites.

Abundant species: more than 30 specimens collected from all sites.

### Results and Discussion

#### Plecoptera (stoneflies)

The species. — At least seventeen stonefly species were recorded from the study area (Table 1). While most of the material consisted of nymphs, adults of eleven species were also collected, allowing confirmation of nymphal identifications.

Species richness ranged from 1 to 7 at the running water sites, but there was no obvious relationship between numbers of species and stream size. Similarly, there were few well defined patterns of distribution. Several species were widely distributed (e.g., *Eusthenia costalis*, *Tasmanoperla thalia* and *Cryptoperla paradoxa*), but the majority were sporadic in occurrence, with at least eleven species recorded from only 1 or 2 sites. This makes it difficult to draw conclusions about general distribution.

Notes on selected taxa. — *Eusthenia reticulata*. This species is apparently rare. Hynes (1989) comments that it has only been collected once in recent years, from a high stream on Mount McCall. The nymph is unknown, although possible nymphs from Mount McCall are grouped with two additional species as the *Eusthenia spectabilis* group in the key of Hynes (1989). In the present study a single female was collected from site 4, while four nymphs of the *E. spectabilis* group listed in Table 1 may be nymphs of *E. reticulata*.

*Leptoperla beroe*. A single male of this species was collected from the shore of Lake Ayr: the nymphs probably occur in the lake, but this has not been confirmed.

*Cardioperla nigrifrons*. Large numbers of nymphs of this species were collected from moss in swift water on the 45° face of a waterfall at site 12.

*Cardioperla* sp. A. A single, very early nymph of a third species of *Cardioperla* was collected from site 5. This nymph had a very strong dorsal ridge on the abdominal terga, but was too small for positive identification. Sampling at other times of the year may yield additional specimens.

Genus *Austrocercoides*. Nymphs of the two known Tasmanian species cannot be distinguished. Adults of *A. zwicki* emerge in spring-early summer, while *A. bullata* adults have been collected from January to April (Hynes, 1989). In the present study adults of *A. bullata* were collected from site 4, while fully developed nymphs from sites 4 and 7 were probably the same species. Nymphs less than half grown were collected from sites 8, 14, 15 and 16, and these could conceivably be *A. zwicki*.

#### Ephemeroptera (mayflies)

The species. — Thirteen mayfly species were collected, all but three belonging to the family Leptophlebiidae (Table 2). At least four, and perhaps as many as ten of these species are undescribed, reflecting the great need for taxonomic study of Tasmanian Ephemeroptera.

Distribution patterns. — Arrangement of the running water sites in order of increasing size highlights the fact that most species featured orderly, well defined patterns of distribution (Table 3). *Ameletoides* sp. was widely distributed in fast flowing habitats of moderate size streams, while *Tasmanophlebia lucustris* avoids currents and was only collected from Lake Ayr and those few running water sites with pools and areas of slow current (sites 2, 4 and 14). Within the genus *Nousia*, *Nousia* sp. 7 was extremely widespread and recorded from most stream sites, *Nousia* sp. 6 was restricted to intermediate size tributary streams in heavy forest, while *Nousia* sp. 5 and *Nousia* sp. 9 were only recorded from larger downstream sites. *Nousia* sp. 8 was restricted to flowing water sites above and below Lake Ayr. The two species of *Austrophlebioides* were also spatially separated. *Austrophlebioides* sp. 4 was restricted to open sites on the Pelion Plain, while *Austrophlebioides* sp. 5 was only recorded from heavily forested sites further upstream.

There was an obvious tendency for species richness to increase as stream size increased (Table 3). The number of species at individual sites ranged from one at site 8 (a small headwater stream) to seven species at the furthest downstream site (site 17).

Notes on selected taxa. — *Ameletoides* sp. This genus was first recorded from Tasmania by Campbell (1981), who collected nymphs from Pencil Pine River near Cradle Mountain. He suggested that they may have been an undescribed species, and comparison of nymphs collected in the present study with specimens from the Victorian Alps supports this suggestion.

*Atalophlebia albiterminata*. This species is common throughout much of Tasmania (Tillyard, 1936). In the present study it was only collected from the Lake Ayr outlet stream, 100 metres downstream from the lake. Its presence at this site may be a consequence of a reduced flow and stable substrate, or perhaps is due to slightly elevated temperatures.



Genus *Nousia*. With six species, the genus *Nousia* is extremely diverse in the study area. This diversity is apparently facilitated by spatial separation of nymphs. Four species in the genus have previously been described from Tasmania, three of them only from lowland localities. Identification of the Pelion material is not possible at present, despite the collection of adults of several of the species.

Genus *D* sp. *tristis*. This species was described by Harker (1954) (as *Jappa tristis*), the type material having been collected by Tillyard in 1917 from Cradle Mountain. In a guide to Australian Leptophlebiidae, Dean (1989) established "Genus D" to accommodate several undescribed species from south-eastern Australia. Examination of nymphs and an adult male from Pelion Valley confirms that the species *tristis* belongs to this undescribed genus. The genus *Jappa* is therefore removed from the Tasmanian fauna.

Genus *Austrophlebioides*. This is the first record of this genus from Tasmania, and both species are undescribed. *Austrophlebioides* sp. 5 is characterised by a striking modification of the labrum. The fringes of setae on the anterior margin have been formed into a "suction disc" which perhaps assists the nymph when clinging to rock surfaces in fast currents. In all other aspects the nymph agrees with typical *Austrophlebioides* nymphs.

#### *Trichoptera* (caddisflies)

The species. — At least fifty species of caddisflies were recorded from the study area (Table 4). The dominant families were Hydrobiosidae (14 species), Leptoceridae (8 species), Conoesucidae (5 species) and Philorheithridae (4 species). Of the fifty species, 38 were collected as either adults or larvae which have been reared to adults, and could be identified to the species level.

Distribution patterns. — Distributions of those species which were recorded from more than one site are presented in Table 5. As with the mayflies, there was a general tendency for species richness to increase with increasing stream size.

Most of the running water species featured distribution patterns which were orderly with respect to position along the river continuum. For example, *Diplectrona* sp. was limited to small-medium size forest streams, *Hydrobiosella cognata*, *Archaeophylax ochreus*, *Caenota plicata* and *Tasmanthrus galbinomaculatus* were restricted to medium size streams but extended further downstream than *Diplectrona* sp., while *Apsilochorema obliquum*, *Taschorema asmanum* and *Conoesucus digitiferus* ranged from medium size forest streams to the furthest downstream sites, and *Taschorema viridarium*, *Hydrobiosella waddama* and *Plectrocnemia* sp. were restricted to the larger downstream sites.

*Taschorema evansi*, *Helicopsyche* sp. and *Tamasia variegata* were only recorded from the Lake Ayr outlet stream. In addition, *Asmicridea edwardsi* may be restricted to the outlet stream, as the only other record (site 4) was a single adult male which may have flown downstream from site 3. All of these species are widely distributed at lower altitudes, and physical conditions unique to site 3 probably explains their presence in the study area.

The leptocerid *Triplectidina nigricornis* was only recorded from site 6, which consisted of a series of small isolated pools on Pelion Plain, and was the only species of caddisfly collected from these pools.

Spatial separation of congeners was a striking feature of the genera *Tasmanthrus* and *Hydrobiosella*. *Hydrobiosella waddama* was only recorded from open sites on the Pelion Plain, whereas *H. cognata* appears to be restricted to forest sites further upstream. A single adult male of *H. cognata* collected at site 17 probably flew down from an upstream site. Similarly, *Tasmanthrus angustipennis* was restricted to the three sites downstream from Lake Ayr, while *T. galbinomaculatus* was recorded from upstream forested sites.

Notes on selected taxa. — *Moruya* sp. Larvae of the genus *Moruya* were collected from many sites, but we are unable to identify them to species. At least some specimens are probably *M. charadra*, adults of which were collected from site 17, but it is likely an additional species is also represented in the samples.

Hydrobiosidae: larval species A, B and C. These species were each recorded from a single site, and only one or two specimens were collected. It is likely that at least two of them are species of *Austrochorema*, while a third may be *Ipsebiosis*. Until adults have been reared, they must remain unidentified.

Genus *Tasmanthrus*. Male pupae and associated larval sclerites were collected, as well as numerous larvae, of two distinctive species of *Tasmanthrus*. One species is clearly *T. angustipennis*, while the male genitalia of the second species agrees with *T. galbinomaculatus* described from Cradle Mountain by Jacquemart (1965). Neboiss (1977) has placed the latter species as a synonym of *T. angustipennis*, but this decision will probably have to be reversed.

#### General comments

The present survey has yielded 80 species of aquatic insects, consisting of 17 species of stoneflies, 13 species of mayflies and 50 species of caddisflies. Species richness varied considerably between individual sites. At running water sites total numbers of species ranged from eight (site 9) to 28 (site 17), with an obvious trend of increasing richness as one moved from small headwater streams to larger downstream sites.

We found no evidence of endemism in the aquatic insects of Pelion Valley. While the Tasmanian mayflies are poorly known, and as a consequence we are unable to assess the wider distribution of the species we collected, Tasmanian stoneflies and caddisflies have been extensively surveyed in recent years. With the exception of *Eusthenia reticulata*, all the stonefly species from Pelion Valley are widely distributed in Tasmania (Hynes, 1989). *E. reticulata* is a species which has rarely been collected, and its presence in Douglas Creek is of significance. Similarly, the caddisfly species which we have identified are well known from elsewhere in the state (Neboiss et al., 1988). The twelve taxa which we are unable to identify were all collected as larvae only, and there is no reason to suggest that any of these are endemic or rare when none of the 38 species which we were able to identify fall into either of these categories.

The survey has highlighted deficiencies in the taxonomy of adults and nymphs of Tasmanian mayflies, and the larval taxonomy of some of the caddisflies. Aquatic insect communities are valuable indicators of general environmental quality, and are responsive to catchment disturbance and changes in such factors as hydrology, temperature and siltation. However, if they are to be fully utilised in environmental monitoring programs, it is important that basic taxonomic information is available, especially for immature stages.

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#### References

- Campbell, I.C., 1981. Biogeography of some rheophilous aquatic insects in the Australian region. *Aquatic Insects* 3: 33-43.
- Dean, J.C., 1989. A guide to Australian mayflies of the family Leptophlebiidae. Prepared for Ephemeroptera Taxonomy Workshop, Murray-Darling Freshwater Research Centre, February 1989.

- Harker, J.E., 1954. The Ephemeroptera of eastern Australia. *Transactions of the Royal Entomological Society, London* 105: 241-268.
- Harker, J.E., 1957. Some new Australian Ephemeroptera. *Proceedings of the Royal Entomological Society, London* (B) 26: 63-71.
- Hynes, H.B.N., 1989. Tasmanian Plecoptera. *Australian Society for Limnology*, Special Publication No. 8. 81 pp.
- Jacquemart, S., 1965. Contribution à la connaissance de la fauna Trichopterologique de la Tasmanie et de la Nouvelle-Zélande. *Bulletin de l'Institut Royal des Sciences Naturelles de Belgique, Entomologie*. 41 (35): 1-47.
- Neboiss, A., 1977. A taxonomic and zoogeographic study of Tasmanian caddis-flies (Insecta: Trichoptera). *Memoirs of the National Museum of Victoria* 38: 1-208.
- Neboiss, A., 1986. Atlas of Trichoptera of the SW Pacific- Australian region. *Series Entomologica No. 37*. Dr. W. Junk: Dortrecht. 286 pp.
- Neboiss, A., Jackson, J. and Walker, K., 1988. *Trichoptera (Caddis-flies) of the World Heritage area in Tasmania*. Department of Entomology, Museum of Victoria: Melbourne.
- Suter, P.J., 1979. A revised key to the Australian genera of mature mayfly (Ephemeroptera) nymphs. *Transactions of the Royal Society of South Australia* 103: 79-83.
- Tillyard, R.J., 1936. The trout-food insects of Tasmania. Part II. A monograph of the mayflies of Tasmania. *Papers and Proceedings of the Royal Society of Tasmania* 1935: 23-59.

Table 1. Plecoptera (stoneflies) of Pelion Valley

	Abundance/distribution	Sites
<b>EUSTHENIIDAE</b>		
<i>Eusthenia costalis</i>	Abundant, widespread	7-11, 13-17
<i>E. reticulata</i> (A)	Rare, restricted	4
<i>E. spectabilis</i> group (N)	Common, restricted	3, 11
<b>AUSTROPERLIDAE</b>		
<i>Tasmanoperla thalia</i>	Abundant, widespread	7,8,10,11,13-16
<i>Crypturoperla paradoxa</i>	Abundant, widespread	8-15
<b>GRIPOPTERYGIDAE</b>		
<i>Leptoperla varia</i>	Common, restricted	2
<i>L. beroe</i>	Rare, restricted	1
<i>Cardioperla nigrifrons</i>	Common, limited	8, 10-12
<i>C. falsa</i>	Common, restricted	10
<i>C. sp. A</i>	Rare, restricted	5
<i>Dinotoperla serricauda</i>	Rare, restricted	17
<i>Trinotoperla zwicki</i>	Common, limited	7, 10, 11, 17
<i>T. tasmanica</i>	Rare, restricted	11
<b>NOTONEMOURIDAE</b>		
<i>Notonemoura lynchi</i>	Rare, restricted	8, 16
<i>Austrocerca tasmanica</i>	Rare, restricted	1
<i>A. rieki</i>	Rare, restricted	2, 3
<i>Austrocercella christinae</i>	Rare, restricted	9
<i>Austrocercoides bullata</i> (A)	Rare, restricted	4
<i>A. sp. (N)</i>	Common, widespread	4, 7, 8, 14-16

A = adults, N = nymphs

Table 2. Ephemeroptera (mayflies) of Pelion Valley

	Abundance/distribution	Sites
<b>SIPHONURIDAE</b>		
<i>Ameletoides</i> sp.	Common, widespread	4,7,9-11,14,15
<b>ONISCIGASTRIDAE</b>		
<i>Tasmanophlebia lacustris</i>	Common, limited	1,2,4,14
<b>BAETIDAE</b>		
<i>Baetis</i> sp. A	Common, restricted	5,17
<b>LEPTOPHLEBIIDAE</b>		
<i>Atalophlebia albiterminata</i>	Rare, restricted	3
<i>Nousia</i> sp.5	Abundant, widespread	4,7,14,15,17
<i>Nousia</i> sp.6	Common, widespread	9-11, 15, 16
<i>Nousia</i> sp.7	Abundant, widespread	2,4,7-11,13-17
<i>Nousia</i> sp.8	Common, limited	2,3,5,17
<i>Nousia</i> sp.9	Common, limited	7,14,17
<i>Nousia</i> sp.10	Rare, restricted	13
Genus D sp. <i>tristis</i>	Abundant, widespread	4,7,11,14,15,17
<i>Austrophlebioides</i> sp.4	Common, restricted	5,17
<i>Austrophlebioides</i> sp.5	Common, limited	7,10,11,15



TABLE 3 Distribution of mayfly species, Pelion Valley

	Running water sites increasing catchment size →												Lake outlet sites		Moss face of waterfall	Standing waters	
	2	8	13	9	16	10	15	11	14	7	4	17	5	3	12	1	6
<i>Ameletoides</i> sp.				X		X	X	X	X	X	X						
<i>Tasmanophlebia lacustris</i>	X								X		X						X
<i>Baetis</i> sp.												X		X			
<i>Atalophlebia albiterminata</i>														X			
<i>Nousia</i> sp. 5							X		X	X	X	X					
<i>Nousia</i> sp. 6				X	X	X	X	X									
<i>Nousia</i> sp. 7		X	X	X	X	X	X	X	X	X	X	X					
<i>Nousia</i> sp. 8		X										X		X	X		
<i>Nousia</i> sp. 9									X	X		X					
<i>Nousia</i> sp. 10			X														
Genus D sp. <i>tristis</i>							X	X	X	X	X	X					
<i>Austrophlebioides</i> sp. 4												X		X			
<i>Austrophlebioides</i> sp. 5						X	X	X		X							
Number of species	3	1	2	3	2	4	6	5	6	6	5	7	3	2	-	1	-

Table 4. Trichoptera (caddisflies) of Pelion Valley

	Abundance/distribution	Sites
<b>HYDROBIOSIDAE</b>		
<i>Apilochorema obliquum</i>	Abundant, widespread	4,5,7,10,14,15,17
<i>Austrochorema pegidion</i>	Common, limited	7,8,10,13
<i>Ulmerochorema</i> sp.	Common, limited	4,5,7,17
<i>Ethochorema nesydrion</i>	Abundant, widespread	4,7,10,11,14-17
<i>Ethochorema kelion</i>	Rare, restricted	15
<i>Taschorema asmanum</i>	Abundant, widespread	4,5,7,12,14,15,17
<i>Taschorema evansi</i>	Common, restricted	3, 5
<i>Taschorema viridarium</i>	Common, restricted	4, 17
<i>Ptychobiosis nigrita</i>	Rare, restricted	15
<i>Keotonga clivicola</i>	Rare, restricted	14
<i>Moruya charadra</i>	Rare, restricted	17
<i>Moruya</i> sp.	Common, widespread	4,7,10,12,14,15,17
Unident. larva sp.A	Rare, restricted	2
Unident. larva sp.B	Rare, restricted	12
Unident. larva sp.C	Rare, restricted	12
<b>GLOSSOSOMATIDAE</b>		
<i>Agapetus tasmanicus</i>	Rare, restricted	5
<b>PHILOPOTAMIDAE</b>		
<i>Hydrobiosella cognata</i>	Abundant, widespread	7,9-17
<i>Hydrobiosella waddama</i>	Abundant, restricted	5,17
<b>HYDROPSYCHIDAE</b>		
<i>Smicrophylax</i> sp.	Abundant, restricted	17
<i>Asmicridea edwardsi</i>	Abundant, restricted	3,4
<i>Dipletrona</i> sp.	Abundant, widespread	8,10,11,13,15,16
<b>POLYCENTROPIDIDAE</b>		
<i>Plectocnemia</i> sp.	Rare, restricted	4,7
<i>Tasmanoplegus spilota</i>	Rare, restricted	2
<i>Nyctiophylax repandus</i>	Common, limited	7,14,17

Table 4 continued.

<b>LIMNAPHILIDAE</b>		
<i>Archaeophylax ochreus</i>	Common, widespread	7,10,11,13-16
<b>PLECTROTARSIDAE</b>		
<i>Plectrotarsus tasmanicus</i>	Common, restricted	1
<b>TASIMIIDAE</b>		
<i>Tasimia</i> sp.	Common, restricted	17
<b>HELICOPSYCHIDAE</b>		
<i>Helicopsyche</i> sp.	Common, restricted	3
<b>CONOESUCIDAE</b>		
<i>Costora rotosca</i>	Common, limited	3,11,17
<i>Costora delora</i>	Common, restricted	4,5
<i>Conoesucus fromus</i>	Common, limited	2,4,17
<i>Conoesucus digitiferus</i>	Abundant, widespread	3,4,7,10-12,17
<i>Conoesucus nepotulus</i>	Common, restricted	12,17
<b>CALOCIDAE</b>		
<i>Caenota plicata</i>	Common, widespread	3,4,7,9-11,15
<i>Tamasia variegata</i>	Common, restricted	3
<b>HELICOPHIDAE</b>		
<i>Alloecella grisea</i>	Rare, restricted	10
<i>Alloecella longispina</i>	Common, limited	7,8,12
<i>Alloecella pilosa</i>	Rare, restricted	12
<b>PHILORHEITHRIDAE</b>		
<i>Aphilorheithrus stepheni</i>	Rare, restricted	1, 4
<i>Aphilorheithrus</i> sp.A	Rare, restricted	14
<i>Tasmanthrus angustipennis</i>	Common, limited	3,5,17
<i>T. galbinomaculatus</i>	Abundant, widespread	4,7,10-12,14-16
<b>LEPTOCERIDAE</b>		
<i>Triplectides similis</i>	Rare, restricted	1
<i>Triplectides bilobus</i>	Abundant, widespread	4,7,11,13-17
<i>Symphitoneuria opposita</i>	Common, restricted	1
<i>Triplectidina nigricornis</i>	Common, restricted	6
<i>Notalina parkeri</i>	Rare, restricted	1
<i>Notalina fulva</i>	Common, restricted	1,4
<i>Notalina</i> sp.	Common, limited	1,3,5,17
<i>Condocerus</i> sp.	Common, restricted	2,14
<i>Oecetis scirpicula</i>	Rare, restricted	1

TABLE 5 Distribution of caddisfly species, Pelion Valley (Taxa recorded from only one locality not included)

	Running water sites increasing catchment size—>												Lake outlet sites 5 3	Moss face of waterfall 12	Standing waters 1 6
	2	8	13	9	16	10	15	11	14	7	4	17			
<i>Apsilochorema obliquum</i>					X	X		X	X	X			X		
<i>Austrochorema pegidion</i>		X	X		X					X					
<i>Ulmerochorema</i> sp.										X	X	X	X		
<i>Ethochorema nesydrion</i>					X	X	X	X	X	X	X	X			
<i>Taschorema asmanum</i>						X		X	X	X	X		X	X	
<i>Taschorema evansi</i>													X	X	
<i>Taschorema viridarium</i>										X	X				
<i>Moruya</i> sp.					X	X		X	X	X	X			X	
<i>Hydrobiosella cognata</i>		X	X	X	X	X		X	X	X	X			X	



Table 5 continued.	2	8	13	9	16	10	15	11	14	7	4	17	5	3	12	1	6
<i>Hydrobiosella waddama</i>												X		X			
<i>Asmicridea edwardsi</i>											X			X			
<i>Diplectrona</i> sp.		X	X		X	X	X	X									
<i>Plectrocnemia</i> sp.										X	X						
<i>Nyctiophylax repandus</i>									X	X		X					
<i>Archaeophylax ochreus</i>			X		X	X	X	X	X	X							
<i>Costora rotosca</i>								X				X		X			
<i>Costora delora</i>											X			X			
<i>Conoesucus fromus</i>	X										X	X					
<i>Conoesucus digitiferus</i>						X		X		X	X	X		X		X	
<i>Conoesucus nepotulus</i>												X				X	
<i>Caenota plicata</i>				X		X	X	X		X	X			X			
<i>Alloecella longispina</i>	X								X					X			
<i>Tasmanthrus angustipennis</i>												X		X	X		
<i>Tasmanthrus galbinomaculatus</i>					X	X	X	X	X	X	X					X	
<i>Triplectides bilobus</i>		X		X		X	X	X	X	X	X	X					
<i>Notalina</i> sp.												X		X	X		X
<i>Condoceris</i> sp.	X								X								
Total number of species	4	3	5	3	6	11	12	9	12	16	16	18	9	9	10	7	1

## Appendix. Details of sampling locations.

Site 1 D. Cartwright and J. Dean, 16 January 1990, Tas., Lake Ayr, 8114.214695

Site 2 J. Dean and D. Cartwright, 16 January 1990, Tas., Small trickle flowing into Lake Ayr, 8114.214695

Site 3 D. Cartwright and J. Dean, 16 January 1990, Tas., Lake Ayr outlet stream, approx. 100 metres d/s Lake Ayr, 8114.211695

Site 4 J. Dean and D. Cartwright, 16 January 1990, Tas., Douglas Creek, upstream of confluence with Lake Ayr outlet stream, 8114.206691

Site 5 D. Cartwright and J. Dean, 16 January 1990, Tas., Lake Ayr outlet stream, upstream of confluence with Douglas Creek, 8114.205692

Site 6 J. Dean and D. Cartwright, 16 January 1990, Tas., Isolated pools, Pelion Plains, 8114.207692

Site 7 D. Cartwright and J. Dean, 16 January 1990, Tas., Douglas Creek, Pelion Rangers Hut, 8114.208683

Site 8 J. Dean and D. Cartwright, 17 January 1990, Tas., Headwater stream, 100 metres North of Pelion Gap, 8114.217649

Site 9 D. Cartwright and J. Dean, 17 January 1990, Tas., Unnamed creek, approx. 3/4 km, NW of Pelion Gap, 8114.211654

Site 10 J. Dean and D. Cartwright, 17 January 1990, Tas., Unnamed creek, approx. 1 1/2 km, NW of Pelion Gap, 8114.209661

Site 11 D. Cartwright and J. Dean, 17 January 1990, Tas., Sharers Hut Creek, approx., 2 1/2 km NW of Pelion Gap, 8114.208668

Site 12 J. Dean and D. Cartwright, 17 January 1990, Tas., Douglas Creek, approx., 2 1/2 km NW of Pelion Gap, 8114.208669

Site 13 D. Cartwright and J. Dean, 17 January 1990, Tas., Unnamed creek, approx., 2 3/4 km NW of Pelion Gap, 8114.207673

Site 14 J. Dean and D. Cartwright, 18 January 1990, Tas., River Forth, Frog Flats, 8114.172674

Site 15 D. Cartwright and J. Dean, 18 January 1990, Tas., Unnamed creek, approx., 1/4 km E of Frog Flats, 8114.176674

Site 16 J. Dean and D. Cartwright, 18 January 1990, Tas., Unnamed creek, approx., 3/4 km NE of Frog Flats, 8114.179678

Site 17 D. Cartwright and J. Dean, 18 January 1990, Tas., Douglas Creek, High Bridge, near old Pelion Hut, 8114.198690







